August 1961

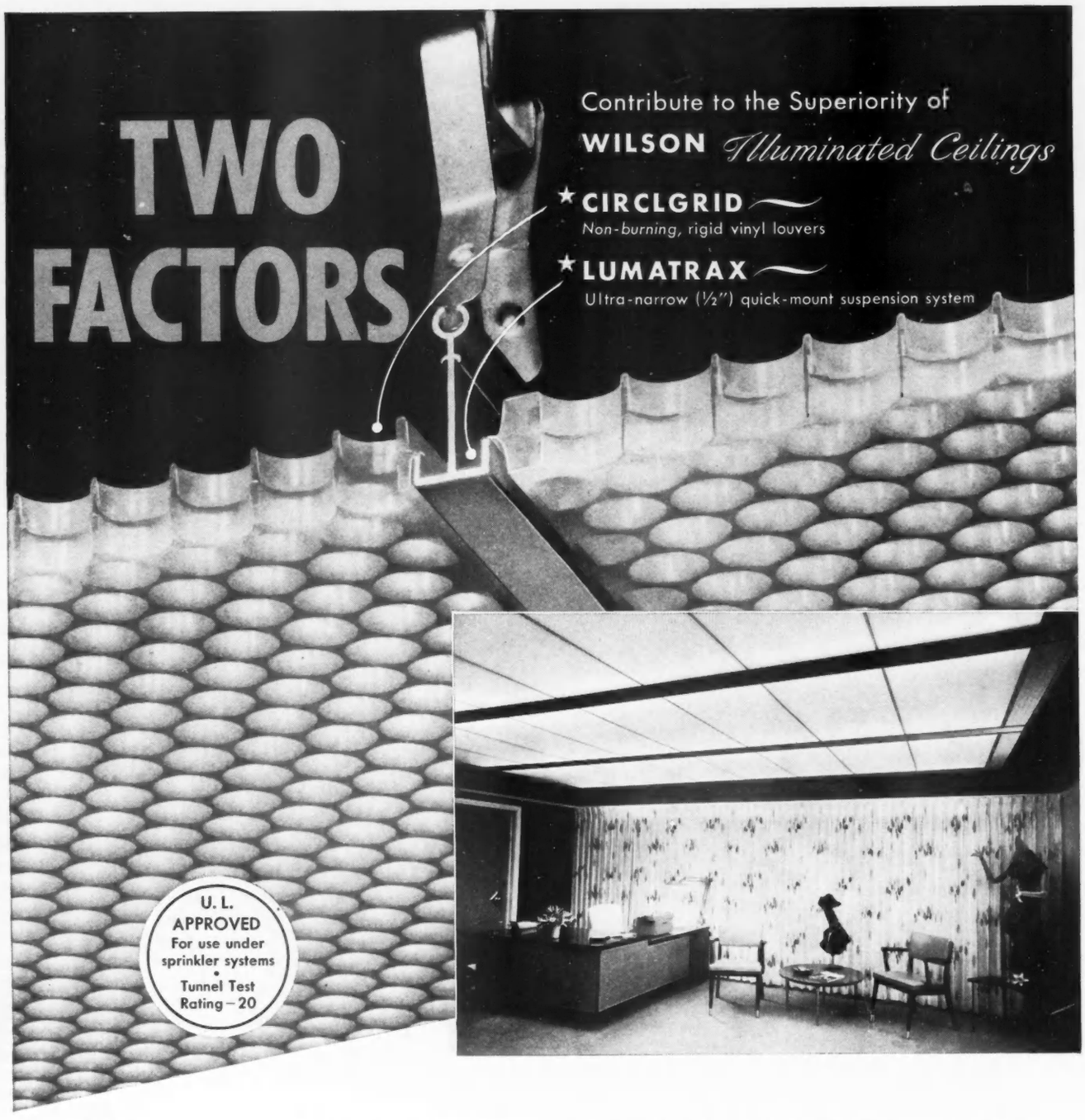
Lighting

COMMERCIAL — INDUSTRIAL — INSTITUTIONAL — OUTDOOR — RESIDENTIAL

a W.R.C. Smith publication

Demonstration office features 525 fc

Page 30



Ageless in beauty . . . versatile in performance, Wilson Illuminated Ceilings are rapidly becoming the architect's favorite lighting system for new construction or relighting.

★CIRCLGRID non-burning vinyl louvers feature thousands of tiny circles in transmitting soft diffused light, permitting intensities ranging to 200 foot candles. CIRCLGRID 2′ x 2′ and 2′ x 4′ panels consist of two non-combustible sheets of rigid vinyl electrically welded for great structural strength . . . with weight of only 3½ ozs./sq. ft.

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Write for Circlgrid and Lumatrax technical literature concerning the installation you are now working on.

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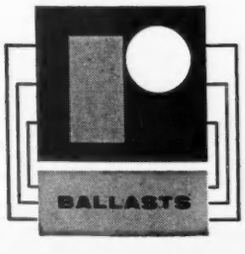

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THORNTON ROAD, BLUE ISLAND, ILLINOIS

For more details on above items, use reply card on page 17.

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IN THIS ISSUE

High level lighting sold itself to an Oregon supermarket owner, who finds the absence of eyestrain a comfort luxury and a sales booster. The usual bare lamp fixtures were replaced with a luminous ceiling. **Page 24.**

A utility company's industrial lighting forum opens new doors to customers through management personnel of industries, architects, consulting engineers, and industrial electrical contractors. **Page 28.**

An office lighting range of 155 to 525 footcandles was achieved for a Pennsylvania power company, with no changes made in the existing air conditioning. **Page 30.**

Prospective customers of a Texas electric company can see at least a portion of their own home simulated in a lighting display. Ceilings are varied to create effects of modern as well as older traditional homes. **Page 32.**

National trends in customer lighting tastes are changing, a personalized country-wide survey reveals. Emerson Electric Company shows how they distinguish between regional and national trends in preparing their lines. **Page 34.**

The economics and design reasoning behind low and high bay industrial lighting are examined by a Westinghouse engineer. Installation guides are drawn up, with specifications explained for various types of lighting. **Page 38.**

Decorative lighting with high levels of illumination adds a new attraction in an Ohio model home. **Page 42.**

More than three times the IES recommended illumination for sports is found in a Pennsylvania gym, which is so well lighted that movies can be made with no supplementary light. **Page 45.**

More on an over-all lighting industry association

One of the principal advantages to be gained through the unifying of the entire lighting equipment industry into a single effective association would be the coordination of special promotions.

All people in the lighting field are vitally affected by the need to educate millions of buyers on their requirements for higher light levels and better qualities of lighting. Some good promotions are being conducted by various segments of the lighting industry now such as outdoor lighting campaigns by the Floodlighting Institute, Lamplighters of America (safety street lighting), residential lighting promotion by American Home Lighting Institute, and commercial lighting campaigns such as the local promotion on office lighting being pushed currently by the lighting industry of Chicago.

But as valuable as these promotions are, they often prove ineffective because of the lack of coordination. A confusing situation results when such promotional material piles up on the desks of contractors, distributors, and electric utility sales executives. The result is that they command only a fraction of the attention of these important allies of the lighting equipment industry that would be forthcoming if the industry were united and its programs logically coordinated.

The lamp bulb and tube manufacturers are largely dependent upon the fixture manufacturers for growth. They can't sell a bulb or tube until someone sells a fixture. These lamp manufacturers are important potential allies in market development, but as of now, they are not able to work with a single organized industry group, and their promotional efforts are therefore weaker than would otherwise be the case.

The type of over-all lighting equipment industry association we are discussing would not overlap in any way with the activities of the technical societies such as the Illuminating Engineering Society. The association we have in mind would include the residential and the commercial-industrial lighting fixture manufacturers, but the membership structure might be such as to include the lamp manufacturers upon some basis, and certainly should include some type of membership for lighting equipment distributors.

LIGHTING will welcome letters for publication from manufacturers and others interested in such an industry association as to how its organization may best be brought about.

—Carl W. Evans, Editor

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See your Artolier salesman or write now for the all new '61 catalog.
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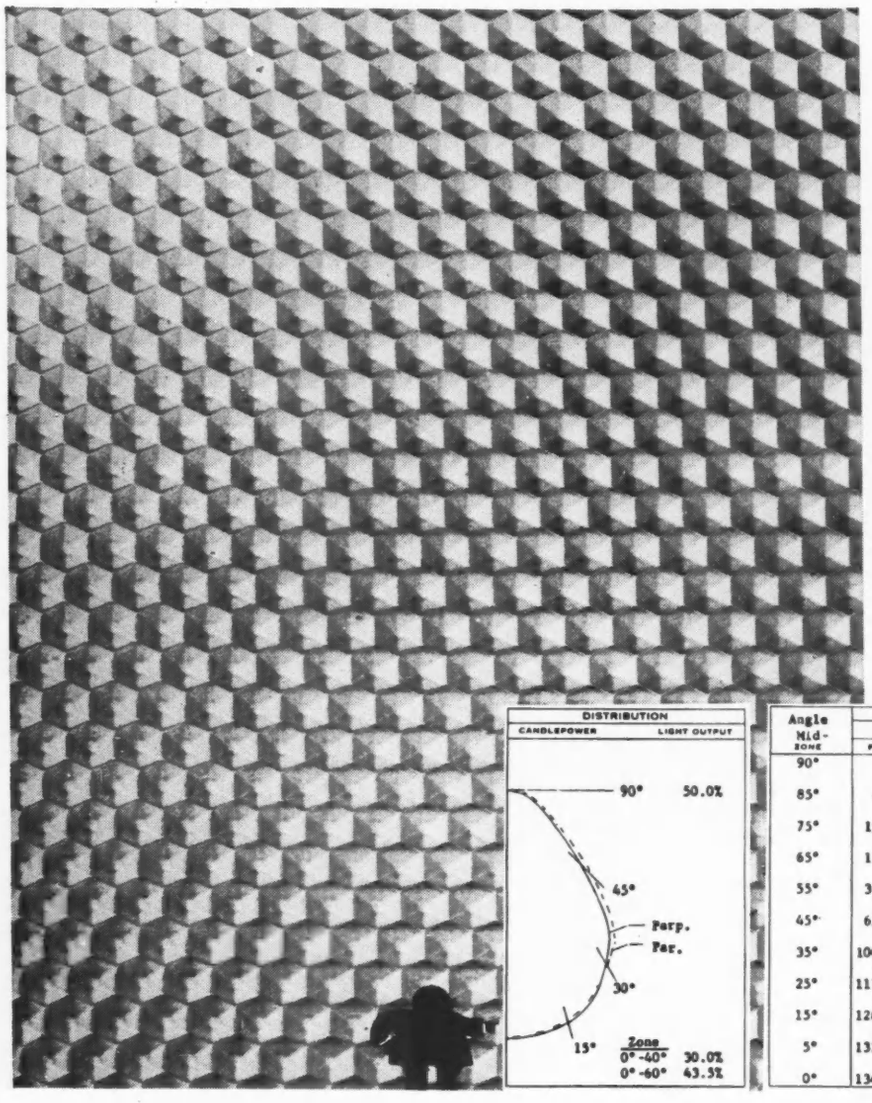
announcing the New EXTRU-LITE® Pattern R-7

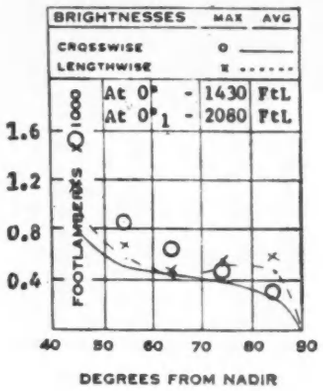


our famous plastic low brightness lensware — NOW extruded in a Brand NEW PATTERN.

Pattern R-7, with optically engineered hexagonal pyramids, permits the light to enter at all angles from the light source. It diffuses and refracts the light onto the work surface with a low brightness that is highly desirable for all types of visual tasks.

This 6-sided prismatic pattern controls, directs and reflects the rays to provide a glareless, more uniform light distribution.

Angle Mid-Zone	Mid-Zone Candlepower Horizontal Angles					Lumens
	Par	22½	45	67½	Perp	
90°	0		0		0	-
85°	40.2		40.2		25.3	40
75°	127		125		96.9	125
65°	176		200		179	188
55°	317		313		279	274
45°	653		620		554	472
35°	1003		1000		970	625
25°	1177		1198		1196	551
15°	1281		1293		1301	365
5°	1334		1335		1338	127
0°	1341		1341		1341	-



IMPORTANT! Superior Advantage of Pattern R-7 over other hexagonal shapes: The secret of positive light control is in the *raised prisms—it's outstanding in more ways than one.*

Available immediately from stock up to 24" wide in Polystyrene or Acrylic.

Write or call our Dept. BK at our factory or our Sales Offices listed below today for Sample of Extru-Lite R-7. It's tougher, safer, and lighter than other materials.

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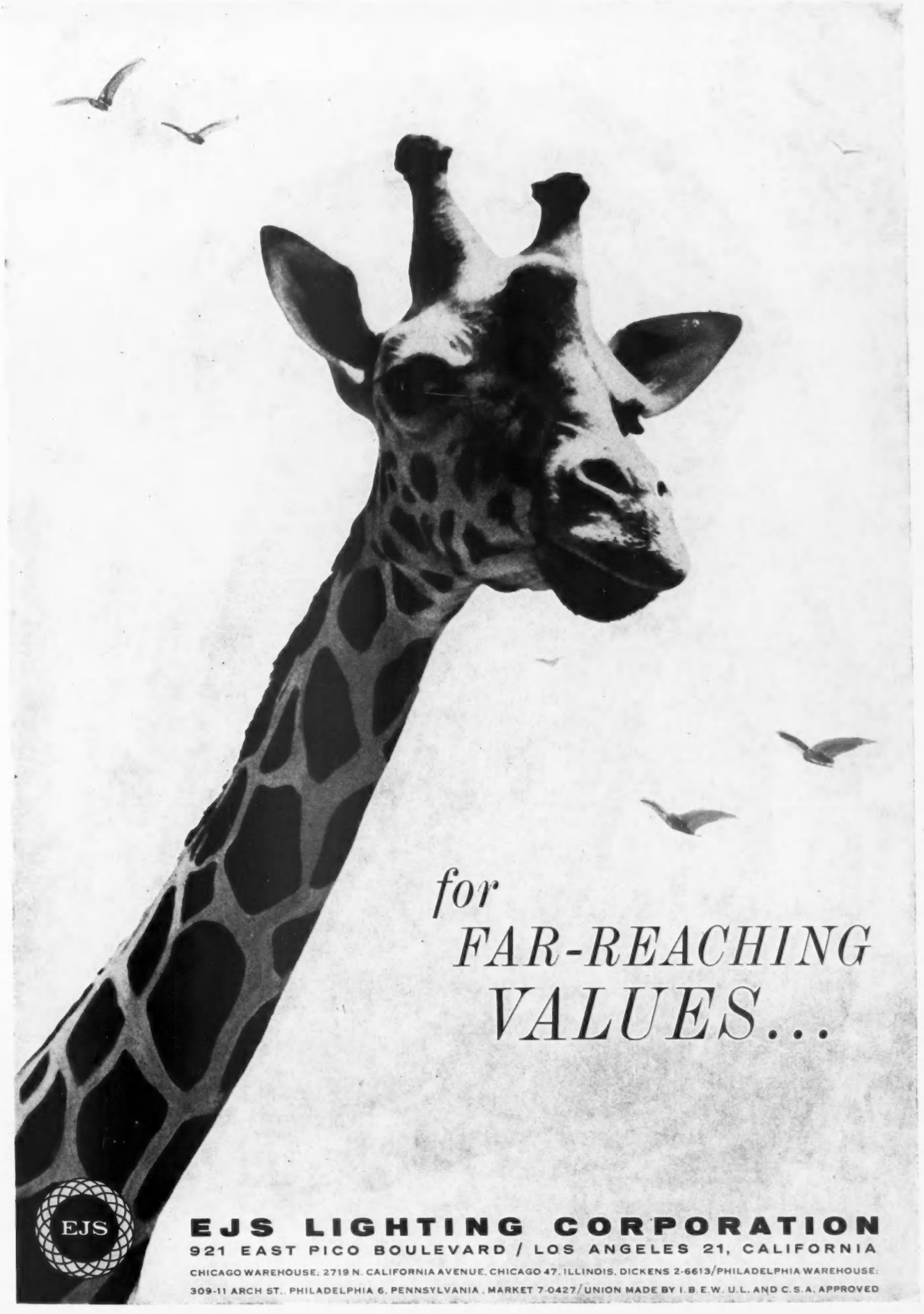
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All cast aluminum

No. 600C

Sheer elegance, with this new and durable lantern. Hand cut lucite panels. 13″ width, 32″ high. Finish: Italia white, Satin black, Swedish, Antique copper.

Write for our catalog.

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CATALOGS & BULLETINS

Available free to readers of Lighting upon request

DEL-VAL HOME FIXTURES—A portfolio describing fixtures for the home is available from Del-Val Manufacturing Co., 519 W. Huntingdon St., Philadelphia 33, Pa. Described are fixtures for every room, plus lanterns, exit lights, swivels, pulleys, etc.

Write No. A-101 on reply card, page 17

MINUTE-MOUNT FIXTURES—A catalog of budget lighting fixtures has been issued by Minute-Mount, a division of Progress Manufacturing Co., Castor Avenue and Tulip St., Philadelphia 34, Pa. The 16-page booklet contains color illustrations of a wide range of fixtures.

Write No. A-102 on reply card, page 17

UNION WEATHERBEST FIXTURES—Union Insulating Co., Parkersburg, W. Va., has issued a four-page bulletin describing and illustrating Weatherbest outdoor fixtures, which are available with a lustrous finish in textured brass or aluminum.

Write No. A-103 on reply card, page 17

SHEFFIELD PLASTIC DIFFUSERS—A pocket folder of several data sheets for plastic diffusers is available from Sheffield Plastics, Inc., Sheffield, Mass. The data sheets describe and illustrate various applications of plastic for fluorescent diffusers, etc.

Write No. A-104 on reply card, page 17

VIRDEN DYNAMICS LINE—A 20-page, full color catalog describes the new Virden Dynamics line of incandescent fixtures designed for offices, lobbies, lounges, motels, restaurants, etc., and is available from Lighting Dynamics, 6103 Longfellow Ave., Cleveland 3, Ohio.

Write No. A-105 on reply card, page 17

ALZAK REFLECTORS—Major Equipment Co., Inc., 4603 W. Fullerton Ave., Chicago 39, Ill., has available two 12-page booklets covering aluminum Alzak reflectors and the Alzak process. The latter is published by the Aluminum Company of America.

Write No. A-106 on reply card, page 17

E-LITE IMPORTED FIXTURES—E-lite Company, Inc., 111 W. 22nd St., New York 11, N. Y., has issued catalog F-21, a 72-page publication showing imported crystal, bronze, and wrought iron fixtures, wall brackets, and hall lights.

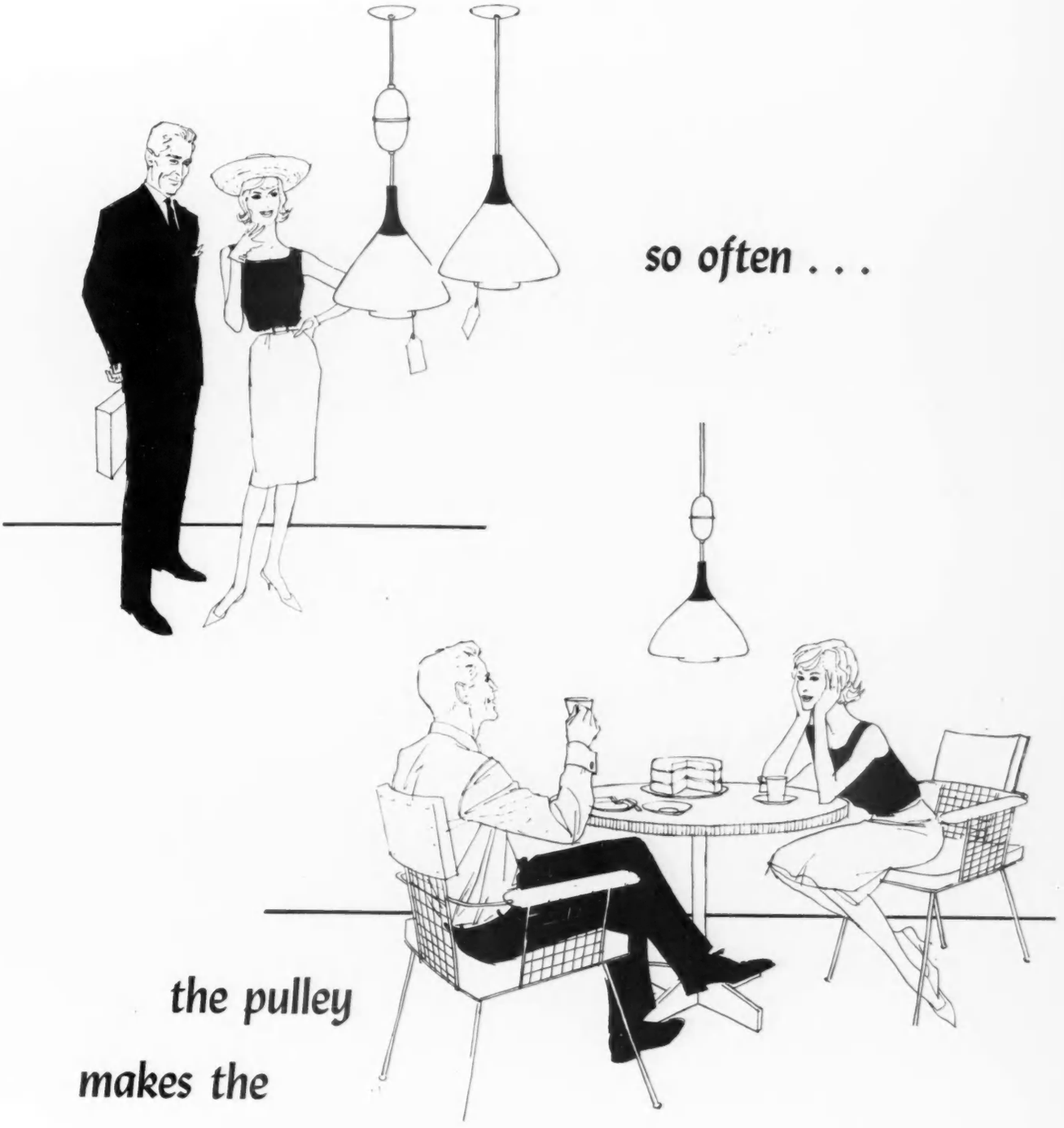
Write No. A-107 on reply card, page 17

ROYAL LAMP STARTERS—Royal Products Co., Inc., 19-21 Grain St., Newark 7, N. J., has issued a bulletin on its line of fluorescent lamp starters. Catalog numbers and prices are included. The bulletin emphasizes the new color packed cartons.

Write No. A-108 on reply card, page 17

HOLOPHANE BANK LIGHTING—Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y., has issued a new brochure on bank lighting, which contains photographs taken of nine different installations. The Holophane consulting service is discussed.

Write No. A-109 on reply card, page 17



so often . . .

the pulley makes the difference!

Many a slow-selling fixture has been transformed into a fast-moving item . . . merely by the addition of a pulley. Often, when it comes to the moment of decision, it's the pulley that makes the difference . . . and the difference that makes the sale.

NORD NORD-NEW YORK, INC. • ONE CENTRAL AVENUE, TARRYTOWN, N. Y.

For more details on above items, use reply card on page 17.

SNAP-IN PORCELAIN LAMPHOLDERS

ROUND BODY · MEDIUM BASE
RATING 660W-250V.

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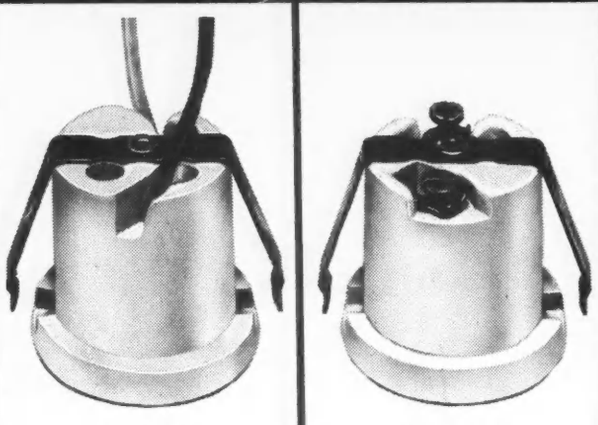

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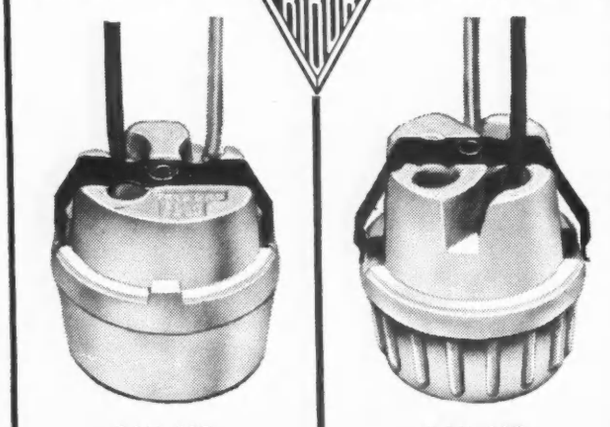
CAT. NO. 553-1

TRIBORO



CAT. NO. 570

CAT. NO. 570-2

Write today for complete catalog and samples

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ELECTRIC CORP.

Waterbury & Ten Eyck Sts., Brooklyn 6, N.Y.
Phone HYacinth 7-3535-36

WESTINGHOUSE LUMINAIRES—A six-page publication from the Westinghouse Electric Corp., Lighting Div., Edgewater Park, Cleveland, Ohio, describes the company's line of type SF surface-mounted fluorescent luminaires, and shows typical applications.

Write No. A-201 on reply card, page 17

LEADER ANTIQUE FIXTURES—Leader Lamp Manufacturing Co., 476 Broome St., New York 13, N. Y., has issued supplement No. 5 to catalog No. 39, which describes a variety of antique style fixtures, including flush- and chain-mounted styles.

Write No. A-202 on reply card, page 17

LEVITON WIRING DEVICES—Catalog No. 60 and new product bulletins available from Leviton Manufacturing Co., Inc., Brooklyn 22, N. Y., cover the company's complete wiring device line. The 100-page booklet contains illustrations and circuit wiring diagrams.

Write No. A-203 on reply card, page 17

PAR QUARTZ LAMP UNITS—A brochure from the Par Light Manufacturing Co., Milan, Ill., introduces the company's new quartz lamp units, with both 500-watt, 120-volt and 1,500-watt, 277- or 240-volt lamps. Diagramed specifications are included.

Write No. A-204 on reply card, page 17

GUTH LUMINOUS CEILINGS—The Edwin F. Guth Co., 2615 Washington Ave., St. Louis 77, Mo., has published an eight-page brochure on its new two- by four-foot module Gratelite luminous ceilings. Included are photos of existing applications.

Write No. A-206 on reply card, page 17

SPERO FLOODLIGHTING HANDBOOK — Spero Electric Corp., 20500 St. Clair Ave., Cleveland 17, Ohio, has issued a new handbook on floodlighting which covers the selection, specification, and installation of floodlights in a variety of applications.

Write No. A-208 on reply card, page 17

ARTOLIER LANTERNS—Over 200 lanterns for indoor and outdoor applications are described in the all-new master catalog released by Artolier Corp., 141 Lanza Ave., Garfield, N. J. Finishes and specifications for each lantern are included.

Write No. A-209 on reply card, page 17

HOWARD SHADES, BULLETS—The latest in aluminum shades and bullets for lighting fixtures are featured in a new catalog published by Howard Metal Products Co., 92-26 180th St., Jamaica, N. Y. Complete dimensions on each item are included.

Write No. A-210 on reply card, page 17

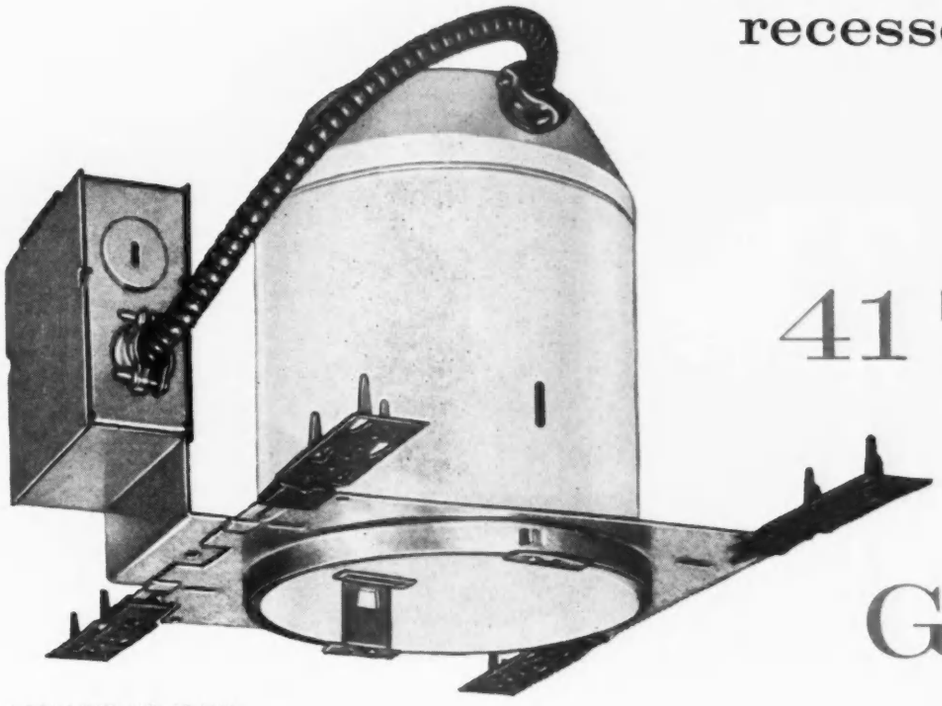
GLOBE FIXTURE LINES—A new, 72-page full-color catalog of the company's complete range of lighting is now available from Globe Lighting Products, Inc., 1710 Flushing Ave., Brooklyn 37, N. Y. Residential, decorative, public area and architectural products are shown.

Write No. A-211 on reply card, page 17

GOTHAM LUMINAIRES—A 12-page brochure from Gotham Lighting Corp., 37-01 31st St., Long Island City 1, N. Y., illustrates fluorescent and incandescent luminaires for architectural application. Downlights, accent lights, and recessed troffers are covered.

Write No. A-212 on reply card, page 17

New MOE LIGHT round recessed housing



PREWIRED NO. M-6000.
UNWIRED NO. M-6001

FITS 41 TRIM AND GLASS VARIATIONS

What could be simpler? When you use the new MOE Light round recessed housing in your lighting installation, you simply adjust the socket for the desired lamp position and the new housing is ready to fit any of 41 trim and glass combinations.

Trims and glass are interchangeable which means you can change a lighting effect quickly at little cost and with no structural or wiring changes.

The new MOE Light round recessed housing comes prewired or unwired. It is easy to mount, remove, or adjust, and light output can be varied by adjusting reflector and socket. Snap-open covers on both sides of outlet box permit fast wiring and inspection of pre-wired housing.

And just look at the choice of trim and glass styles!

FOR MORE INFORMATION, MAIL THIS COUPON TODAY

MOE LIGHT DIVISION
Thomas Industries Inc.
Dept. AL Louisville 2, Kentucky

Please send me more information regarding the new MOE Light round recessed housing.

MOE LIGHT

Name_____
Firm_____
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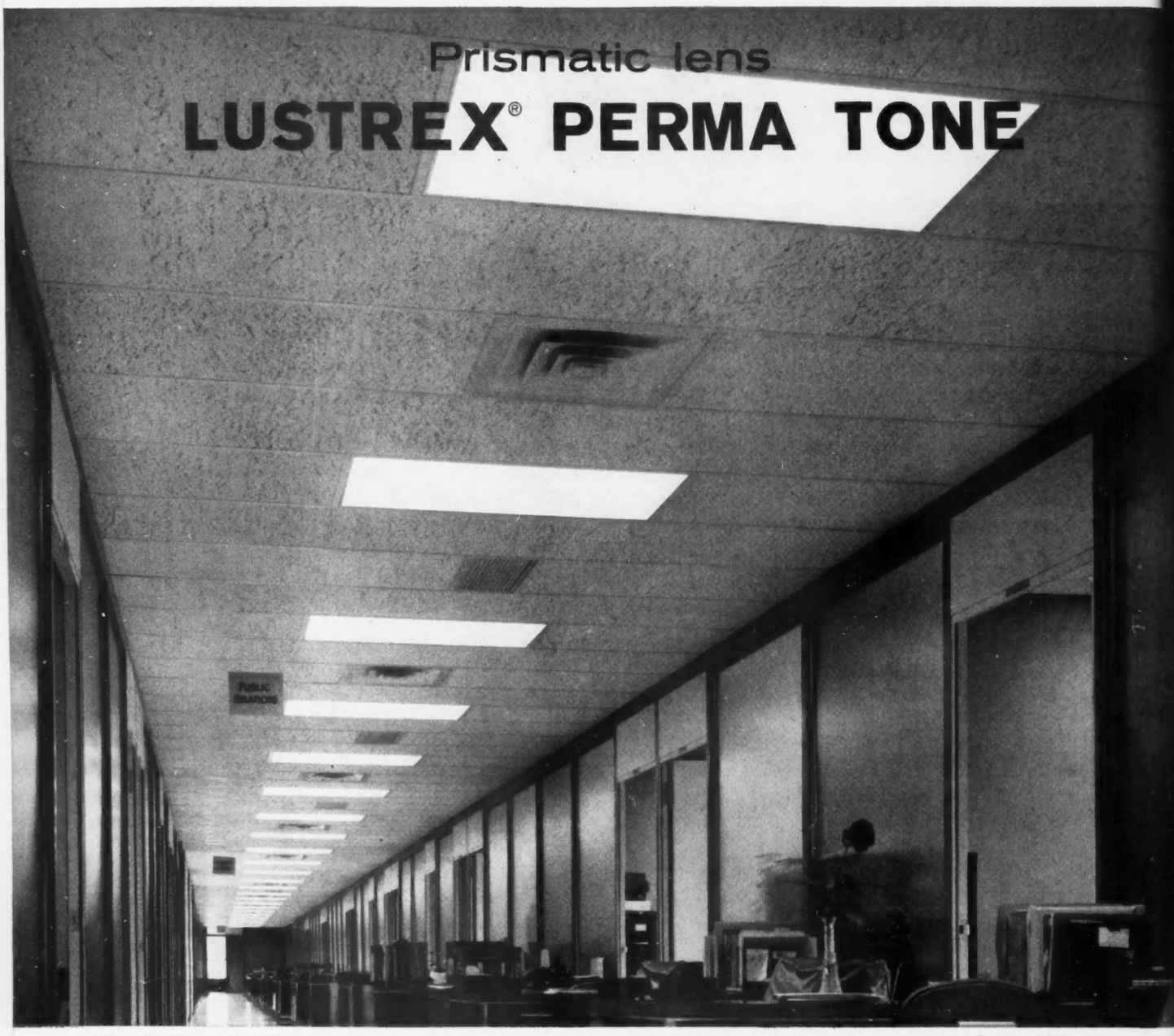
ABOVE ALL:

Prismatic lens
LUSTREX® PERMA TONE



Fixture Manufacturer: Westinghouse Electric Corp. ● Extruder: KSH Plastics Corp., 10212 Manchester, St. Louis 22, Mo. ● Photo taken in Gateway #4 Bldg., Pittsburgh, Pa.

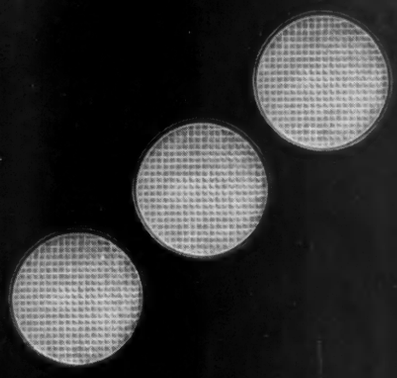
More Lustrex perma tone is used for lighting fixtures than any other ultraviolet light-stabilized styrene

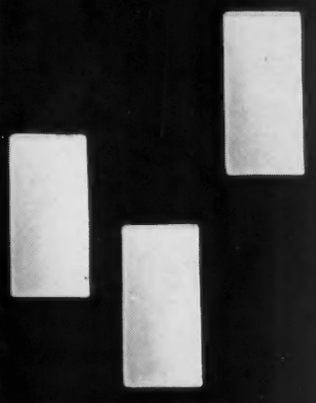
In crystal, clear white and a complete color range, perma tone exceeds IES-NEMA-SPI JOINT specifications for ultraviolet light-stabilized styrene. With perma tone you can create low cost areas of illumination with good diffusion, dimensional stability, and uniform light distribution. Use of perma tone assures color stability, 2 to 3 times greater resistance to yellowing under ultraviolet light. Its light weight makes for easier handling, installation and maintenance. New Impact Lustrex perma tone provides extra toughness and flexibility for snap-fitting to metal parts, high resistance to abnormal abuse, lighter weight through thinner walls. For free technical report on both regular and impact Lustrex perma tone styrene, including accelerated aging test results and other valuable data on styrene in lighting fixtures, write to Monsanto Chemical Company, Plastics Division, Room 833, Springfield 2, Mass.

LUSTREX: REG. U. S. PAT. OFF.

Monsanto

MONSANTO ORIGINATOR IN **PLASTICS**





light-forms

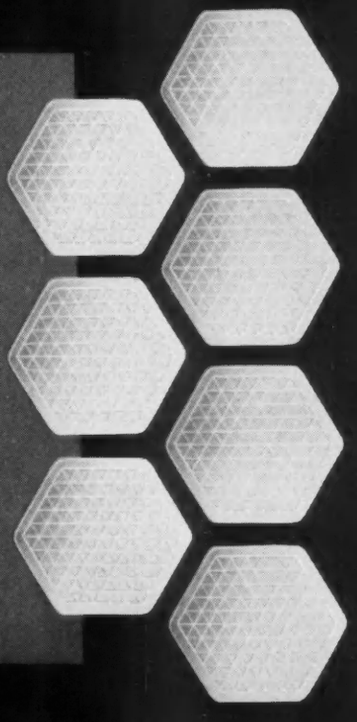
A NEW VISUAL EXPRESSION

in incandescent lighting

Glowing geometric shapes combine the beauty of soft satin handblown glass with all-aluminum construction to provide an unusual combination of decorative effects limited only by the imagination of the designer. ***light-forms*** can be used individually or in combinations of alignment to create patterns of light that become an integral part of the architecture.

Designed for wall use only, ***light-forms*** may be used on either interiors or exteriors.

PATS. APPLIED FOR



PRESCOLITE MANUFACTURING CORPORATION
2229 Fourth Street, Berkeley 10, California

FACTORIES: Berkeley, California • Neshaminy, Pennsylvania • El Dorado, Arkansas

Write for complete Catalog LF-1 or refer to Sweets Catalog File

3-SECOND INSTALLATION

New KULKA Types 582-583 recessed contact lampholders are specially designed for ultra-fast assembly and long service life under rugged conditions. They are the only units of this type available that can be installed from the lamp side of the fixture housing. With their "snap-in" construction, and flat side to assure proper alignment — and to allow directional lighting with P.G. lamps, mechanical installation of a unit takes only three seconds.

FEATURES

- "Snap-in" Construction for 3-Second Assembly.
- Designed for P.G., H.O., and V.H.O. Lamps.
- No Mounting Screws or Snap Rings.
- Extremely Low Contact Resistance.
- Can Be Snapped-In from Front Without Taking Fixture Apart.
- Flat Side to Prevent Rotation and to Allow Directional Lighting with P.G. Lamps.
- 18 AWG Leads Spot-Welded to Spring Contacts.
- 14 AWG Leads Available for Outdoor Signs.
- Approved for Use in Enclosed Outdoor Fixtures without Pitching.
- Cannot Rattle in Fixture.
- No Dust Catching Spines
- Made of White Urea.
- Rated for Full 600 Volts, 660 Watts.
- Listed by Underwriters' Laboratories.

FREE! Write for full details on KULKA Types 582-583 lampholders... And for the full KULKA ELECTRICAL WIRING DEVICES catalog covering extensive lines of fluorescent, incandescent and other items engineered for efficiency and economy.

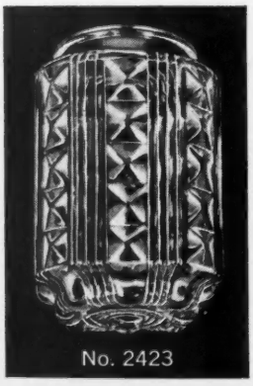
MADE BY EXPERTS—AND GUARANTEED

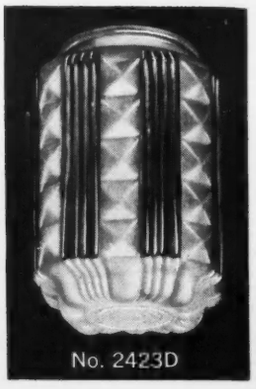
Kulka

KULKA ELECTRIC CORP.
633-643 SO. FULTON AVENUE
MOUNT VERNON, N.Y.

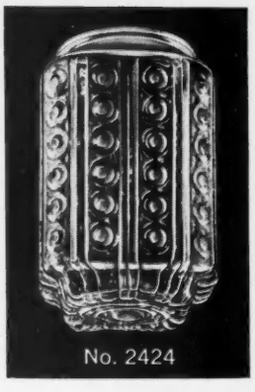
NEW SHADES

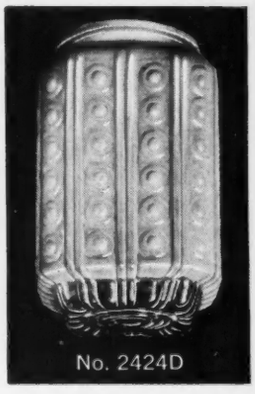
hall shades



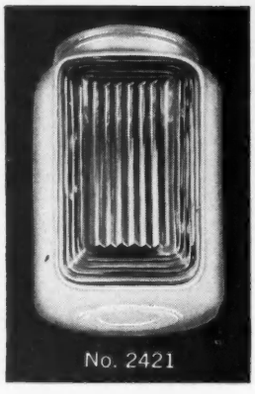


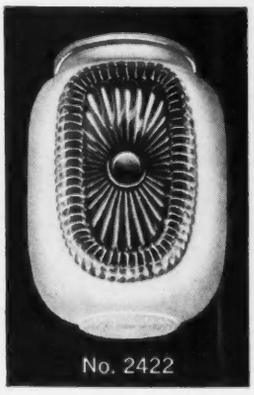
Clear and frosted, attractive diffusing design.
Ht. 6"
Max. Dia. 4"
Fitter Size 3¼"





bath shades





Frosted with clear diffusing window.
Ht. 6"
Max. Dia. 4"
Fitter Size 3¼"

Thatcher

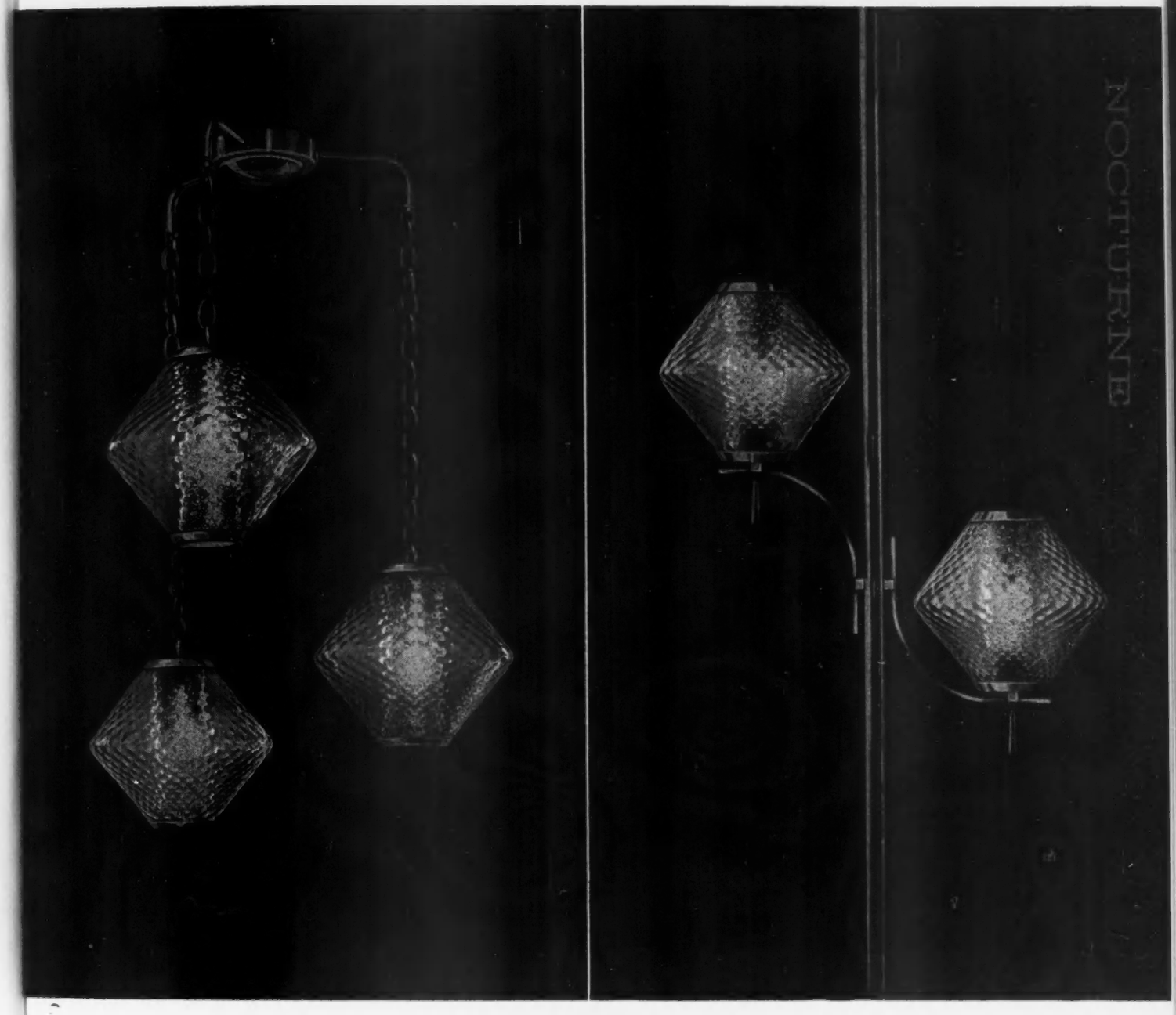
glassware for lighting

Write for complete information and prices

(Sold to manufacturers only)

THATCHER GLASS MFG. CO., INC. JEANNETTE, PENNSYLVANIA

THE MATCHED BEAUTY of lamps and fixtures... Lightcraft of California presents companion pieces from the "Nocturne" group. Designed for all lighting applications — executed in hand-blown smoked glass, graceful rectangular brass tubing, and subtle pierced brass cylinders — the complete "Nocturne" lamp and fixture series is shown in our latest full-color supplement. This is one of many exclusive new groupings in our distinguished line of creative lighting, popularly-priced and custom-quality manufactured. For an invaluable sales-aid, qualified distributors are invited to write now for both the new 20-page supplement and current 80-page 1961 catalog.



1600 WEST SLAUSON AVENUE
LOS ANGELES 47, CALIFORNIA

(not affiliated with any other company)

LIGHTCRAFT OF CALIFORNIA

PORTABLE LIGHTING DESIGNED FOR PROFIT AND PRICED TO SELL

OVER 30 FAST-SELLING DESIGNS

Write for complete illustrated catalog and price lists

Modern lines and functional designs combined with quality, manufacturing and sensible pricing. The completeness of the line and versatility enables you to offer portable lighting for office, industry and home. ACME's portable lamps are carefully designed for the best possible lighting characteristics and are skillfully manufactured and finished to assure customer satisfaction and repeat sales. SELL MORE . . . EARN MORE with ACME Portable Lighting.

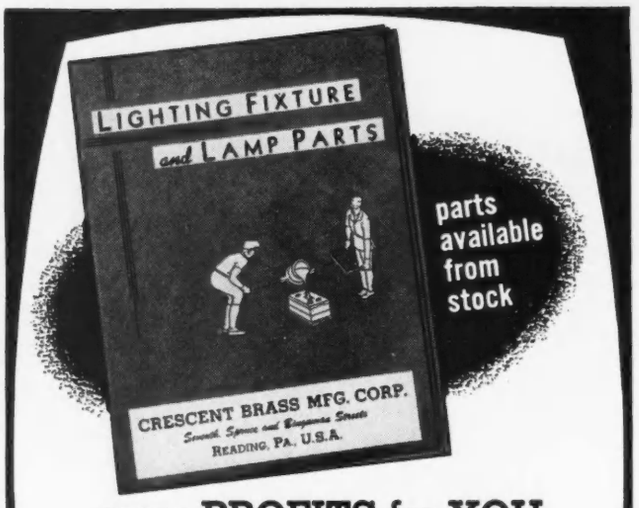
The "QUALITY" name in portable lighting

Acme

ACME LITE PRODUCTS CO., INC.
CONGERS, N. Y.

Feather-Touch Control

A1



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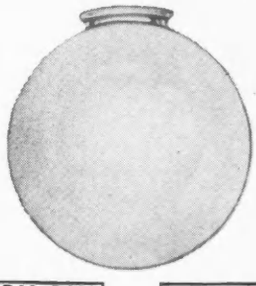
Check this foundry for your cast brass parts. Over 50 years of specialized service to the lighting fixture and lamp trade. Send for this 48-page catalog. Shows parts available from stock. Will also manufacture parts to YOUR specification.

From Foundry to Manufacturer

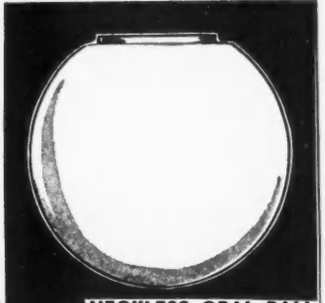
CRESCENT BRASS MFG. CORP.
Seventh, Spruce & Bingaman Sts.
Reading, Pennsylvania

BLOWN OPAL GLASS COMMERCIAL UNITS



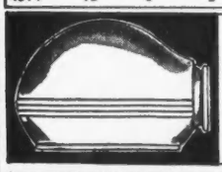
OPAL BALL (WITH FITTER NECK)

Cata. No.	Ball Size	Fitter	Ctn. Pcs.	Wt. Lbs.
4500	5"	3¼"	12	10
4501	6"	3¼"	12	12
4502	7"	3¼"	24	42
4504	8"	4"	12	20
4506	10"	4"	12	27
4507	10"	6"	12	27
4508	12"	4"	4	17
4509	12"	6"	4	17
4510	14"	6"	4	21
4511	14"	7"	4	21
4512	14"	8"	4	21
4513	16"	6"	2	28
4514	16"	8"	2	28

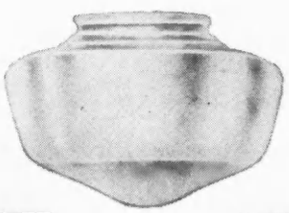


NECKLESS OPAL BALL

Cata. No.	Ball Size	Opening	Ctn. Pcs.	Wt. Lbs.
4516	6"	4"	36	35
4518	8"	4"	12	20
4520	10"	4"	12	27
4521	12"	5¼"	4	17
4522	14"	5¼"	4	21
4523	16"	5¼"	2	28



BATH ROOM GLASS
No. 4538
Opal Glass
Fitter 2¼"



OPAL UNIT

Cata. No.	Diam.	Fitter	Ctn. Pcs.	Wt. Lbs.
4526	7"	4"	24	23
4528	9"	4"	12	18
4529	10"	4"	12	31
4530	10"	6"	12	31
4531	12"	4"	12	32
4532	12"	6"	12	32
4533	14"	6"	4	16
4534	16"	6"	4	23
4535	18"	6"	2	15

BELL TYPE
blown opal glass
No. 4540 — 6" Diam.
2¼" Fitter
Packed 36 Wt. 23 lbs.
Price .60
No. 4541 — 7" Diam.
2¼" Fitter
Packed 24 Wt. 18 lbs.

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ANGELO BROS. CO. 2333 N. MASCHER ST., PHILA. 33 PA.

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Help yourself to free literature and more details on any product mentioned in this issue.

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Be sure to print or write legibly your name and address—drop it in the nearest mail box and

Lighting pays the postage!

AUGUST, 1961

Send free information on these NEW PRODUCTS and/or services (fill in key numbers):

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Send this FREE LITERATURE (fill in key numbers):

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Company..... Page..... Company..... Page.....
Company..... Page..... Company..... Page.....

My Name ..... Position.....
My Company's Name .....
Address (number and street) .....
City ..... Zone..... State.....

AUGUST, 1961

Send free information on these NEW PRODUCTS and/or services (fill in key numbers):

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Send this FREE LITERATURE (fill in key numbers):

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Send free information on these ADVERTISEMENTS:

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My Name ..... Position.....
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Address (number and street) .....
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These cards can help you get valuable information

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Lighting
1760 PEACHTREE ROAD, N. W.
ATLANTA 9, GEORGIA

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Lighting
1760 PEACHTREE ROAD, N. W.
ATLANTA 9, GEORGIA

APPLETON VAPORTIGHT FIXTURES—Appleton Electric Co., 1701 Wellington Ave., Chicago 13, Ill., is re-issuing their 20-page bulletin 5-A. Detailed descriptions and dimensional data for the V-51 series convertible vaportight lighting fixtures are included.

Write No. A-701 on reply card, page 17

MARVAL RESIDENTIAL FIXTURES — Marval Lighting Fixture Co., 248 N. 8th St., Brooklyn 11, N.Y., has issued a 12-page color catalog describing unusual values in residential fixtures. With 68 illustrations, the catalog simplifies selection and ordering.

Write No. A-702 on reply card, page 17

PURITAN TEXTURED GLASS—Puritan Lighting Fixture Co., 21-25 Boerum St., Brooklyn, N.Y., has introduced a new line of residential fixtures to celebrate its 36th anniversary, and the line is described in their illustrated "Fabulous Textured Glass" brochure.

Write No. A-703 on reply card, page 17

STONCO BRACKETS AND FIXTURES — Stonco Electric Products Co., Kenilworth, N.J., has issued catalog PB61 illustrating their new line of completely weatherproof prismatic wall brackets and ceiling fixtures for all exteriors requiring clean styling.

Write No. A-704 on reply card, page 17

WESTINGHOUSE LIGHTING — A new booklet, "Lighting for Merchandising," is now available from the Westinghouse Electric Corp., Lighting Div., Edgewater Park, Cleveland, Ohio. The eight-page booklet has many examples of high quality lighting.

Write No. A-705 on reply card, page 17

H. G. METALS SWIVELS—H. G. Metals, Inc., 1355 Atlantic Ave., Brooklyn, N.Y., has available a complete catalog on the company's line of one-piece solid brass swivels, all of which are UL approved, and are obtainable with lacquered polish finish.

Write No. A-706 on reply card, page 17

HOWARD MILLER FIXTURES—Two- and four-page catalogs illustrate the famous bubble and net lights and bubble cluster fixtures designed by George Nelson for the Howard Miller Clock Co., Zeeland, Mich. The catalogs specify dimensions, price, and finish.

Write No. A-707 on reply card, page 17

MIROFLECTOR STANDARDS — Miroflector Co., Inc., Inwood 96, N.Y., is offering a catalog containing a complete program for all incandescent fixture needs. It contains over 100 pages and has over 1,000 new applications of architectural specials and standards.

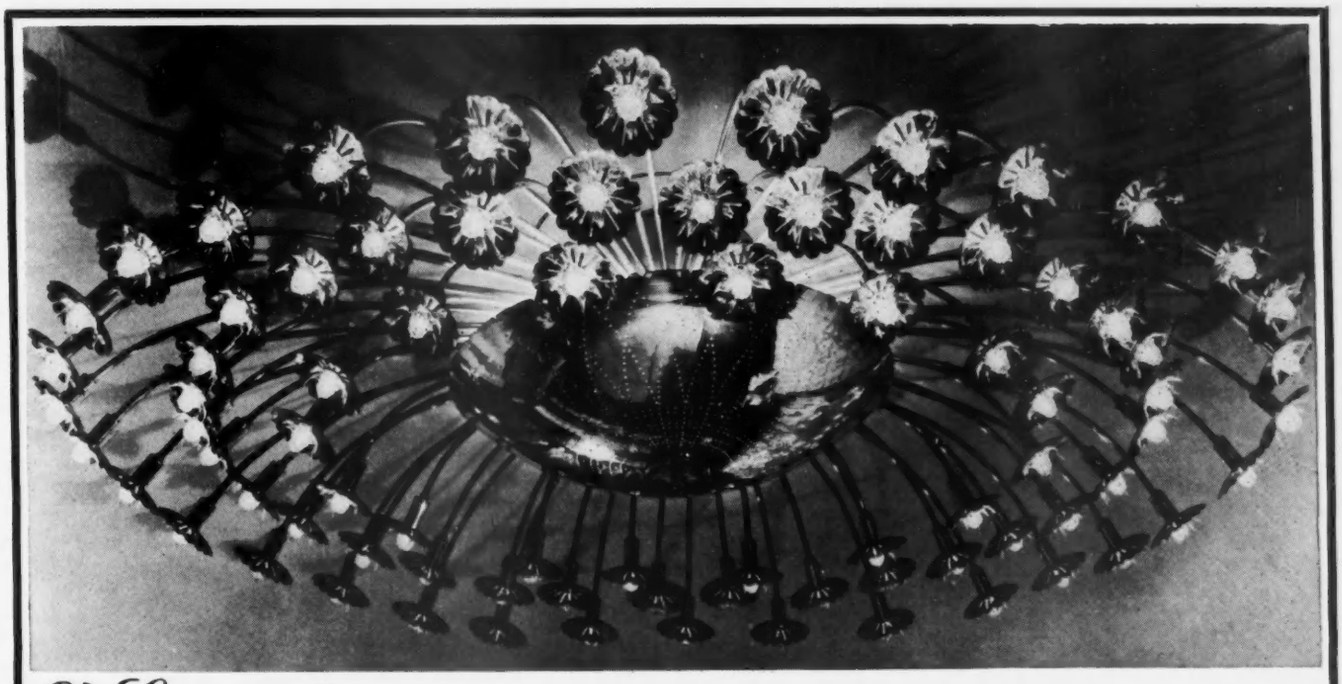
Write No. A-708 on reply card, page 17

DURO-LITE BULBS—A four-page booklet describes the Flamescent bulbs made by Duro-Lite Lamps, Inc., 2321 Hudson Blvd., North Bergen, N.J. These long-life decorative bulbs feature a gas-like flame, and can be burned outdoors in any type weather.

Write No. A-709 on reply card, page 17

ROTUBA EXTRUSIONS—Rotuba Extruders, Inc., 437 88th St., Brooklyn 9, N.Y., has published a 22- by 28½-inch double-sheeted, pamphlet-like brochure, depicting almost 200 of their custom-designed and standard rigid die shape extrusions used to control light.

Write No. A-710 on reply card, page 17



6' Cascade ... 80 gracefully arched polished brass arms with hand-cut bobeches give the feeling of a myriad of falling stars. Dramatic lighting indeed, for hotels, motels, clubs, showrooms, institutions. Also available in 3', 4', 5' and up to 20' widths. Scores of other original chandeliers and sconces, many of cast architectural bronze.

We invite inquiries for variations of basic designs or for special orders of your own design.

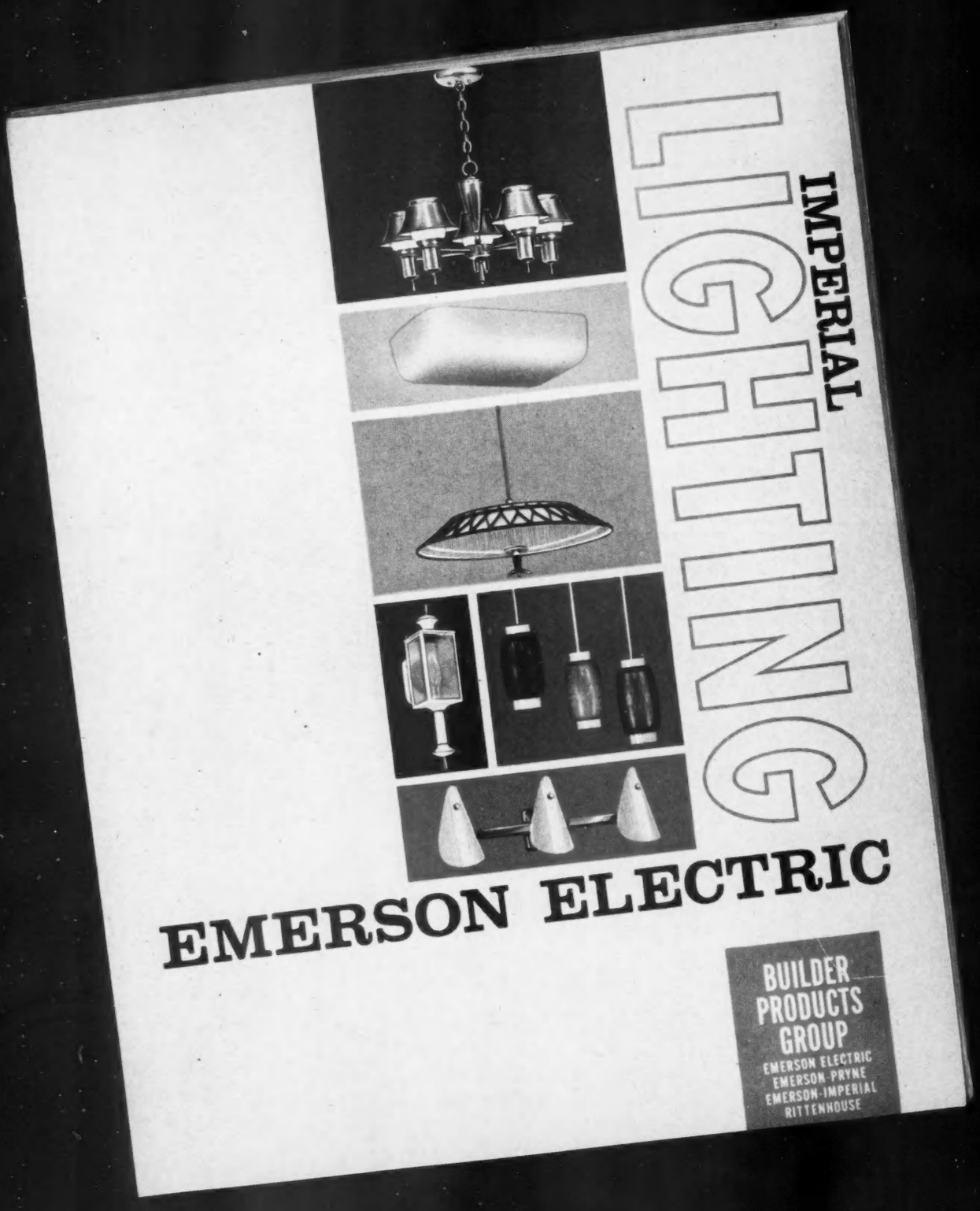
CONTRACT DEPARTMENT L

Coronet Chandelier Originals

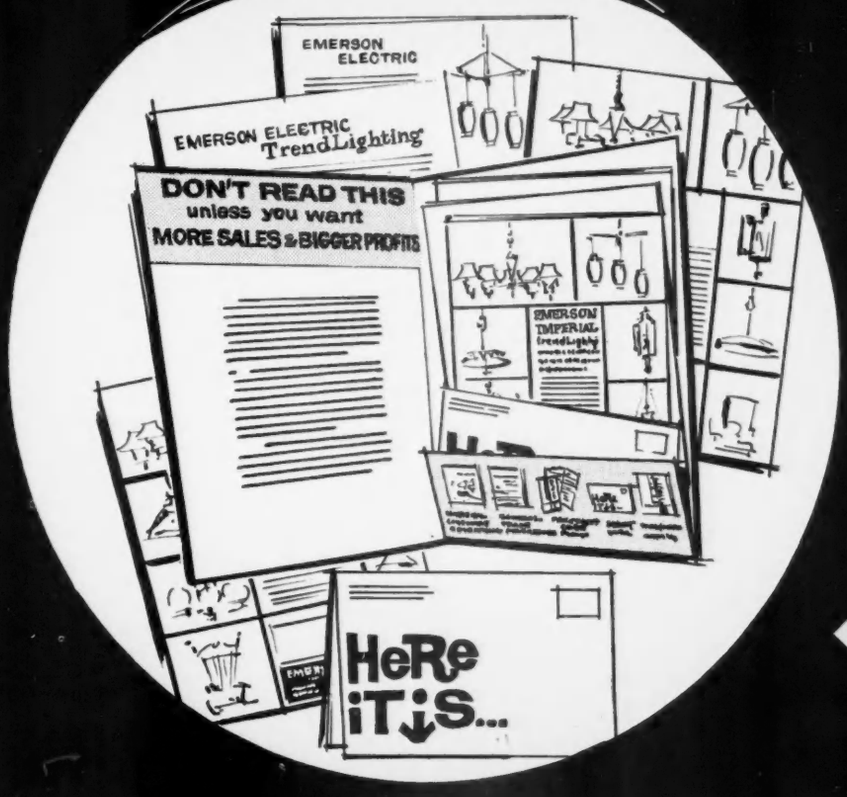
Division of JAY LIGHTING MFG. CO., Inc.

5 East 35th Street, New York 16

NEW, FULL-COLOR CATALOG!



A NEW COMPLETE LINE...
trendlighting by EMERSON IMPERIAL



New, highly-styled fixtures, plus big promotional program, give you more **PROFIT** *per sale!*

Now . . . in **one** catalog . . . a fixture for every requirement . . . for every room in the home (and outdoors, too). Fixtures to blend with every decorating theme . . . priced to appeal to more customers . . . styled to appeal to all tastes. That's the new Emerson-Imperial complete line catalog . . . just off the press . . . featuring **more** traditional fixtures . . . **more** highly-styled modern items . . . packed with eye-catching chandeliers, accent lights, pulldowns. Full of exciting new design ideas . . . colorful fixtures in cased-opal glass . . . ceramics . . . plastics. And all 246 fixtures are easy to find in our illustrated "instant index."

Here is **the** fixture line for you! See for yourself why Emerson-Imperial's new catalog will bring you more dollar profit per sale. Order your free copy now!

PLUS . . . Big Promotional Program that helps you sell.

» » » » *ASK YOUR EMERSON-IMPERIAL REPRESENTATIVE how you can tie-in with his unique advertising and direct mail program that's designed to bring customers right to* ***your*** *showroom. See how it's geared to bring you more sales—and profits—immediately.*

MAIL THIS COUPON TODAY!

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NEW EMERSON-IMPERIAL CATALOG

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BUILDER PRODUCTS GROUP

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PRYNE — POMONA, CAL. KEYSER, W. VA.
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RITTENHOUSE — HONEOYE FALLS, N.Y.

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Please send me my **FREE** copy of your new Emerson-Imperial TRENDLIGHTING catalog.

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Here's the right prescription for ailing fixture sales. No. 717-W is just one of our many top-selling pulleys. 21" diameter with a wide decorator selection of finishes—white with brass trim (as shown), black with brass trim, or polished brass or polished copper throughout. Retails about $36.00.

GERINGER

LIGHTING

GERINGER & SONS MFG. CORP.

Factory & Offices: Peekskill, New York

LEHROLITE FIXTURES—Lehrolite, Inc., 53 Parker St., Wallingford, Conn., has released their latest catalog, No. 29. It features a new series of tole designed lighting fixtures in addition to the company's traditional and contemporary fixtures of unusual design.

Write No. A-801 on reply card, page 17

G-E OUTDOOR BALLASTS—Bulletin GEA-7119A, a six-page booklet from General Electric Co., 1 River Rd., Schenectady 5, N. Y., contains tables of prices and data on the G-E full line of fluorescent lamp ballasts for outdoor applications, including wiring.

Write No. A-802 on reply card, page 17

DU PONT LIGHTING SHIELDS—"Lighting Shields Made from 'Monocite' Methacrylate Monomer," a new brochure from A-15526, Advertising Dept., E. I. du Pont de Nemours and Co., Inc., Wilmington 98, Del., tells how such panels can be used for varied effects.

Write No. A-803 on reply card, page 17

FLOODLIGHTING ESSENTIALS—A comprehensive outline of the essentials of efficient, economical floodlighting is given in 16-page bulletin 6175C, available from General Electric Co., 1 River Rd., Schenectady 5, N. Y. Vertical and horizontal lighting are covered.

Write No. A-804 on reply card, page 17

APPLETON INTENSO FLOODLIGHTS—The Intenso Econoflood line of commercial and industrial floodlights is covered in bulletin EFL-960, which has been recently published by the Appleton Electric Co., 1701 Wellington Ave., Chicago 13, Ill.

Write No. A-805 on reply card, page 17

K-S-H PRISMATIC PANELS—K-S-H Plastics, Inc., High Ridge, Mo., has available a new catalog sheet covering the white Opal K-4 and K-5 polystyrene prismatic lens panels. The sheets are a complete working tool for the architect and lighting engineer.

Write No. A-806 on reply card, page 17

LUMINOUS CEILINGS—Available from Luminous Ceilings, Inc., 3701 N. Ravenswood Ave., Chicago 13, Ill., is an illustrated, circular slide rule calculator which will be of particular interest to specifiers of luminous ceilings.

Write No. A-807 on reply card, page 17

LANTZ HOIST—A brochure now available from Lantz Manufacturing Co., Inc., P.O. Box 392, Valparaiso, Ind., describes the company's new Hi-Hoist for lifting fixtures, ductwork, etc. The steel device adjusts to a height of six feet, four inches.

Write No. A-808 on reply card, page 17

MAJESTIC RESIDENTIAL FIXTURES—A new 72-page catalog from Majestic Metal Spinning and Stamping Co., Inc., 537 Sackett St., Brooklyn 17, N. Y., covers home lighting fixtures ranging from provincial styling to the company's Celestial and other modern lines.

Write No. A-809 on reply card, page 17

NL CUSTOM CHANDELIERS—A color brochure on colonial and custom design chandeliers is available from the NL Corp., 2480 E. 22nd St., Cleveland 15, Ohio. Brochure No. 230 illustrates many styles and functions of chandeliers for home, church, and commercial uses.

Write No. A-810 on reply card, page 17

Meet..... THE STARGLOW by modern

MEET . . . THE "STARGLOW"

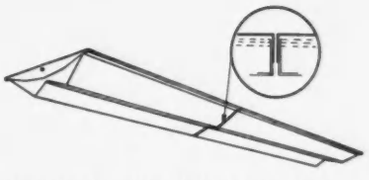
A DISTINCTIVE NEW FLUORESCENT FIXTURE DEVISED TO FILL THE NEED FOR AN ULTRA-LOW PROFILE, RUGGED YET BEAUTIFULLY STYLED UNIT. INTERIOR DESIGNERS AND ARCHITECTS WILL FIND THE TIMELESS SYMMETRY OF LINE AND PROPORTION A HANDSOME COMPLEMENT TO TASTEFUL DECOR AND STRUCTURE WHETHER PERIOD OR MODERN.

LIGHTING ENGINEERS WILL FIND THE EMPLOYED PRINCIPLE OF LARGE AREA – LOW BRIGHTNESS GIVES UNPARALLELED ILLUMINATION QUALITY DESPITE THE MOST DIFFICULT FACTORS.

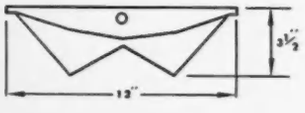
THE STARGLOW HAS BEEN CLEVERLY CONCEIVED TO GIVE EVERY APPEARANCE OF BEING RECESSED WHILE ACTUALLY SURFACE MOUNTED EITHER SINGLY OR IN LINE WITH NO NEED OF ADAPTERS TO JOIN UNITS. IT IS THE FIRST LUMINAIRE EVER BUILT TO FULLY ELIMINATE END PLATE SHADOWS.

A ONE PIECE POLYSTYRENE DIFFUSER PROVIDES UNMATCHED GLARELESS DIFFUSED LIGHT. SEAMLESS AND FULLY SEALED THE DIFFUSER PROVIDES NO PURCHASE FOR DUST AND DIRT THUS MINIMIZING LIGHT LOSS.

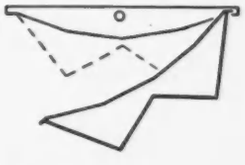
THE ALL WELDED STRUCTURE AND HIGH QUALITY ENAMELED FINISH ASSURE A LONG SERVICEABLE LIFE AT AN EXPENSE LEVEL COMPATIBLE WITH THE MOST MODEST LIGHTING BUDGET.



END PLATE CONSTRUCTION PROVIDES VIRTUALLY UNBROKEN ROWS OF GLOWING ILLUMINATION



OVERALL SIZE SHOWS COMPACTNESS AND RECESSED APPEARANCE OF UNIT.



HINGED FROM EITHER SIDE PROVIDES EASY ACCESSIBILITY FOR INSTALLATION OR MAINTENANCE.

USES TWO RAPID START LAMPS

Catalog No. 23 U4-R2K4

BUT DESCRIPTIONS ARE HARDLY ADEQUATE: YOU SHOULD SEE THE FIXTURE ITSELF. SAMPLES AVAILABLE AT USER'S COST OF

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ST. LOUIS 17, MISSOURI

Gentlemen:

☐ Please send sample of Fixture at user's price.

☐ Please send illustrated catalog page and design information.

Name _____

Address _____

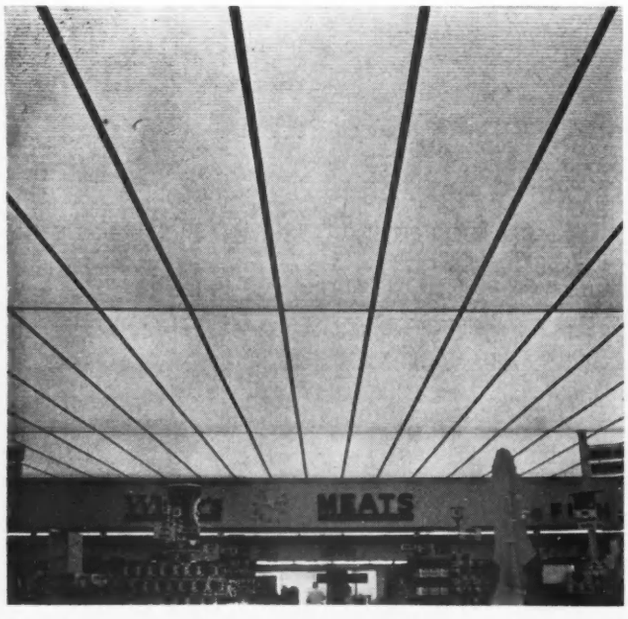
Position _____

City _____ Zone ____ State _____

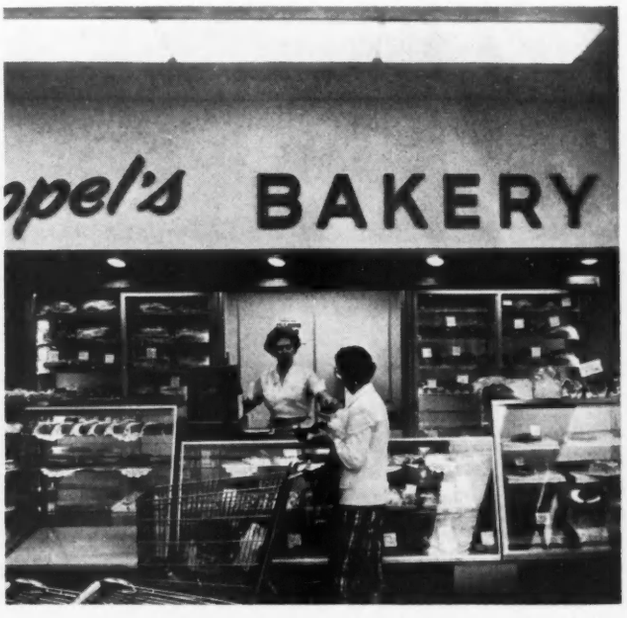
Two main sections of luminous ceiling light the check-out counters, right, and the dry grocery area, left.

Luminous ceiling provides 140 fc

This installation is a significant improvement over the bare lamps



The luminous ceiling consists of attractive translucent plastic sheets supported by suspended aluminum T-bars.



Incandescent lighting in the retail bakery section helps to accentuate the freshness of the products on display.

Shielded fluorescents and incandescent spots light the meat section.

for supermarket

found in most food stores

By Edward R. Lucas, Field Editor, Poulsbo, Wash.

◆ Light can be costly, especially for the large supermarket whose wide-open spaces greedily soak up the lumens.

Yet supermarket owners do realize the importance of building better sales totals through better illumination. In general, supermarkets have a higher level of illumination than do most retail establishments.

At the same time, supermarket owners generally cut their lighting installation costs as closely as they possible can and still have acceptable illumination. For present day installations, this level of acceptability now ranges between 80 and 100 footcandles.

Almost all such markets use bare lamp fluorescent type fixtures for their main store lighting. The cost for such a typical supermarket job runs about $1.50 per square foot.

In Oswego, Oreg., a small city (popuation 9,000) in the greater Portland area, the new Wizer's Oswego Foods supermarket, with about 10,000 square feet of sales area, is one of the very few grocery stores in the country to install ultra-high-level lighting in a luminous ceiling.

A few more installations of this sort could very well lead to upgrading of lighting standards in this important consumer industry.

According to Jerry Jones, lighting engineer at W. R. Grasle Co., Portland, the contractors who installed the system:

"We didn't have to do any selling to persuade owner James J. Wizer that this was the kind of installation for him. He had just returned from Texas, where he had seen a shielded lighting installation in a supermarket down there, and he told us to design something just as good or better for his new Wizer's Oswego Foods here.

"We found the kind of shielding material—Lumi-grid plastic manufactured by Globe—that would do the job for him. Using this material for the false luminous ceiling, we designed a system that would deliver a solid 140 footcandles to the sales floor below. Mr. Wizer is enthusiastic about the results."

The customer in this case was more conscious of lighting problems than is the average person because his eyes have always been abnormally sensitive, he explains. He assumed the lighting was to blame for the headaches which had afflicted him every day at about 4 p.m. in the 5,000 square foot supermarket which he had previously operated for 12 years in Oswego.

Even though other peoples' eyes are not as sensitive as his, he assumed that there was nevertheless some glare discomfort present in shopping in a supermarket. One of the things he had noticed in the Texas supermarket was a distinct absence of eyestrain, combined with high-level lighting, and this was what he wanted to duplicate.

Major lighting in this store is provided by the luminous ceiling, which covers 7,200 square feet. This is all fluorescent tube lighting.

There are also a number of incandescent fixtures, mostly spotlights, for special departments such as meat, produce, and the bakery.

The luminous "false" ceiling was fabricated by laying sheets of the thin translucent plastic over aluminum T-bars suspended on quarter-inch rods from the true ceiling. The aluminum bars are exposed and are visually attractive.

This installation leaves a space of 37 inches between the true and the luminous ceiling. Conditioned air circulates through this space in the summer to help keep the

store cool. It is expected that this will also prolong the life of the lamps.

Actually, there are two main sections of luminous ceiling. The largest measures 72 by 81 feet and covers the dry groceries section. The other, measuring 12 by 60 feet, covers the check-out area. Several other segments of the ceiling are illuminated by smaller shielded fluorescent fixtures in addition to the incandescent spots.

Altogether, there are 634 eight-foot fluorescent lamps used, plus 300 four-foot long fluorescents. Almost all tubes are ballasted in pairs. The majority of the eight-foot long tubes are mounted in 16-foot long fixtures, two tubes to the fixture. There are 21 eight-foot-long single-tube fixtures and 12 16-foot long four-tube fixtures.

The incandescent part of the installation includes 21 R-30 floodlights, 20 R-40 floodlights, 17 300-watt floods, and two 150-watt and 13 100-watt floodlights.

Total cost of the 120-volt fluorescent installation was about $22,000, or $3.20 per square foot.

With small light loss of absorption, the system still delivers 140 footcandles. The luminous ceiling therefore represents a comparatively inexpensive method for shielding the lamps to eliminate glare, with only moderate light loss.

The effect in the store is exceptionally comfortable. In fact, not until he measures the light output with a light meter, does a person realize that the intensity is about twice that of the average supermarket.

"There's no doubt in my mind that this installation has increased sales above the level we would have attained with a regular, lower light level installation," the owner says. "People can see the merchandise better, which is bound to increase impulse sales and our average sales figure.

"Our over-all sales have doubled since moving to this new store, an increase due to other facts as well. Our average sale has likewise increased to almost twice its former amount.

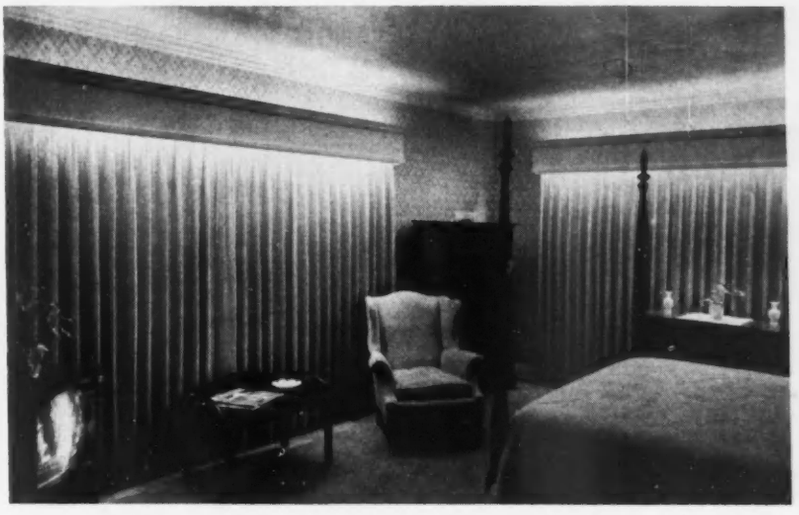
"The complete absence of eye-strain makes it easier for shoppers to see merchandise. And eliminating this discomfort encourages them to linger in the store for a longer time.

"It has also been worth some-

(Continued on page 64)

Various types of fixtures used in the store blend together to create a comfortable shopping atmosphere.

Western fixtures light kitchen area.



Valance lighting adds beauty to the bedroom in the Morris Allen home.

An effective home lighting plan

Combination system gives a pleasing light balance

By J. R. Turner, Service Representative, Tampa Electric Co., Tampa, Fla.

◆ A home lighting installation that utilizes a wide range of fixtures including valances, recessed eyeball units, chandeliers, and portable lamps, is attracting considerable attention in Winter Haven, Fla.

With lighting designed by Morris Allen, owner, and J. R. Turner, of the Tampa Electric Co., the installation creates a striking night appearance, and contributes greatly to the matter of home security.

(Continued on page 45)

Three types of fixtures produce vertical lighting in the living room.

Six recessed fixtures are used in the overhang, with two carriage lights on either side of the front door.

Forum promotes industrial lighting

Successful meeting and exhibits highlight utility's industrial campaign

By George E. Toles, Field Editor, Hamburg, N. Y.

◆ The pulling power of a well-planned and executed industrial lighting forum was recently demonstrated by the Dayton Power and Light Company at a conference conducted in the power company's service building.

The conference featured the theme, "The Light Way to Profit," attracting industrialists, engineers, and industrial electrical contractors from a wide area. The forum was a highlight of the utility's industrial lighting campaign which ran during the first quarter of 1961.

The forum was aimed primarily at management personnel of the power company's industrial customers, architects, consulting enginers, and industrial electrical contractors.

Physical facilities of Dayton Power and Light for a meeting of this type are ideal. The firm used the second floor of its service building, which contains a large lobby, a 400-person dining room, and a 600-seat auditorium.

Three major lamp manufacturers—General Electric, Westinghouse, and Sylvania—set up their lamp displays in the lobby.

Seats were removed from the rear half of the auditorium. This area was used for fixture displays of seven local electrical equipment distributors. Backdrops, divider rails, and uniform name signs were furnished by the power company.

Each distributor was assigned a specific type of industrial lighting equipment to feature. For example, one was assigned office lighting; another, mercury vapor lighting another, outdoor flood-lighting; another very high output fluorescents, etc.

In addition to their feature assignment, the distributors could display any other industrial lighting equipment they desired.

Each exhibitor had handout product literature available. In addition, some handed out free lamp bulbs. Sylvania gave away free Panelescent Nite-lites, which proved to be a good promotional gimmick.

At the center rear of the auditorium was a rear projection type screen. A slide projector was set up behind this screen.

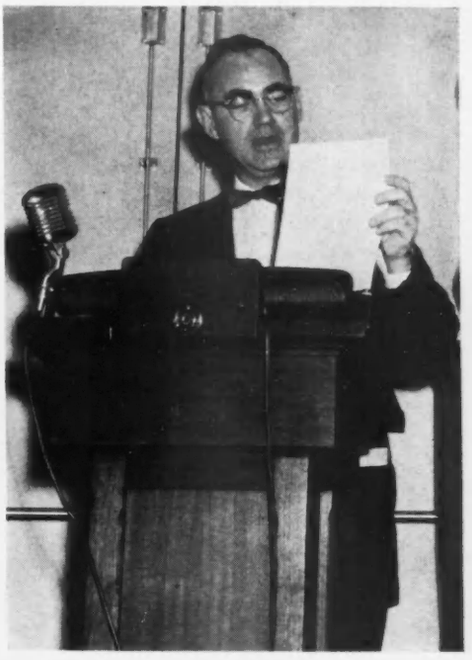
On the left hand side of the stage (from the audience view) were the podium and demonstration equipment used by speakers. All demonstration equipment was controlled from this point through use of a control panel built into the podium.

On the right side of the stage was an attractive desk and chair set furnished by a local office equipment dealer. This area depicted an office in an industrial plant.

The industrial lighting forum was an evening meeting, designed to draw maximum attendance. It began with dinner, and as visitors later moved from the dining room to their seats in the auditorium they had to pass all the exhibits.

Sessions got underway with welcome remarks by F. R. Knipp, supervisor of the Dayton Power and Light power sales department. He stressed the importance of good industrial lighting.

After dinner (opposite page), visitors were able to view exhibits of industrial lighting equipment set up by three manufacturers and seven local distributors. Welcoming visitors to the industrial lighting forum was F. R. Knipp, supervisor of DP&L's power sales department, shown at the podium, right. Theme was "The Light Way to Profit."



The meeting was turned over to Tom K. Baughman, industrial lighting engineer, who discussed light sources. He then asked the audience to listen in as a power salesman, James E. Clark, power sales engineer, made a lighting call on the plant manager of an industrial customer. Thomas E. Bennett, another power sales engineer, took the part of the customer.

Mr. Clark acted out a regular lighting call in which he discussed lighting levels. As he showed his "customer" photographs of actual local applications to illustrate his point, a slide of the same installation would flash onto the rear projection screen for the benefit of the audience.

While the power salesman was talking to his "customer" on the right side of the stage, this area was well lighted. Mr. Baughman and his demonstration equipment on the left side were darkened.

After Mr. Clark finished his presentation, that area of the stage was darkened and the lights came up on Mr. Baughman on the left side.

This then was the general pattern: Mr. Baughman could discuss and demonstrate the equipment, and then shift to another power salesman who would present a sales story and show case history pictures to his "customer" (Mr. Bennett in each case).

After "Lighting Levels," the following subjects were covered by power company engineers: "Fluorescent Applications," by Robert M. Kyvik, power sales engineer; "Mercury Vapor Applications," by Arnold A. Appel, junior power sales engineer; and "Outdoor Lighting Applications," by Carl J. DeBrosse, junior power sales engineer.

Mr. Knipp pointed out this was a rather unique way of presenting the lighting story to utility customers, using its own people rather than outside "experts."

The forum served a dual purpose. Not only did Dayton Power and Light customers receive an interesting presentation but the approximately 100 distributor salesmen and the utility's own salesmen are better equipped after hearing and seeing the program.

This low-voltage, remote control panel enables Mr. Drumm to select . . .

Office illumination

Installation demonstrates a method

By Bruce M. Hertel, West Penn Power Co., Greensburg, Pa.

◆ The old adage that "the shoemaker's children are always the last to get shoes" doesn't hold true at West Penn Power Co., Greensburg, Pa.

High-level lighting is featured in all of the company's installations. And the recent lighting installation in the office of West Penn president S. L. Drumm goes one step further—providing a glimpse into what may be office lighting of the future.

At the flick of a low-voltage remote control switch, Mr. Drumm can set the lighting in his office from 155 footcandles through eight other settings, all the way to 525 footcandles.

This is far above the recommended minimum, but lighting of the future will provide optimum, not just minimum seeing conditions. In addition, the company had other good reasons for making this installation.

Ever since the recent Illuminating Engineering Society eight-year study by Dr. Blackwell established the need for higher footcandle levels, the problem has been how to provide these lighting levels—without causing discomfort from excessive brightness, without creating uncomfortable, overheated working areas, and without creating any new air conditioning problems.

The installation in Mr. Drumm's office was made to demonstrate one method of providing 500 footcandles, and higher, of lighting

. . . a variety of illumination levels for different types of work or demonstrations to visitors.

levels range from 155 to 525 fc

of relighting an existing area without changing the air conditioning

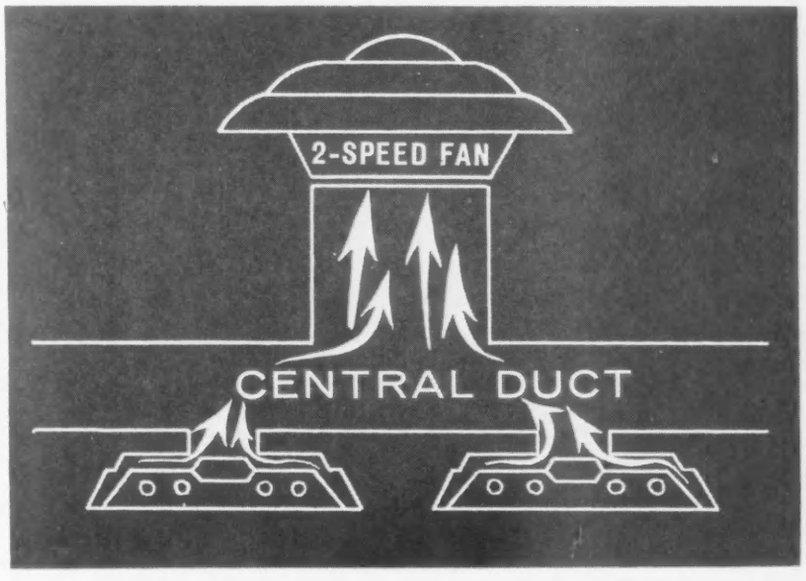
for maximum seeing comfort in an existing area, without making changes in the existing air conditioning system.

The office measures 14 by 20 feet. Walls are painted a light buff color. The lighting is accomplished with eight rows of three troffers each, in the 12- by 17-foot rectangle of luminous ceiling. Each two- by four-foot troffer has four 40-watt cool white fluorescent lamps. The bottoms are Corning 70 low brightness, prismatic lenses.

Six wooden baffles further reduce glare and add a decorative touch to break up the monotony of the glass rectangle.

A low-voltage, remote control switch controls the lighting levels,

(Continued on page 64)



Heat from the lamps is removed through a flexible duct from each fixture which connects to a central duct and two-speed fan on the roof.

How contractor brings in fixture

Three display rooms have varying ceiling heights to resemble

By Ruel McDaniel, Field Editor, Port Lavaca, Texas.

◆ One of the major reasons for the outstanding volume of fixture business done by Hinote Electric Co., Beaumont, Texas, is the company's policy of displaying fixtures in such a way that at least one fixture room simulates in some detail the rooms of a prospect's own home, according to Mrs. V. G. Hinote, buyer of fixtures and secretary-treasurer of the company which was founded by her late husband.

The concern has stocked fixtures since 1932, and maintains three different fixture display areas. One occupies about one-third of the store's wide sales area; the other two are separate rooms, constructed especially for displaying fixtures.

"The height of the ceiling of a room to be fitted with fixtures has much to do with the size and type of fixtures which are most appropriate for it," Mrs. Hinote points out. "So in order for a prospect to see displayed fixtures at a height simulating the height of her home's ceiling, we varied the height of the ceiling in each of our three rooms."

One room has an eight-foot ceiling, which displays to greatest advantage fixtures suitable for modern homes. Another room has a ten-foot ceiling, while the third has a ceiling 13 feet from the floor.

"This unit with the high ceiling is especially effective in displaying fixtures for use in remodeled old homes," Mrs. Hinote points out. "There are a lot of fine old homes in this area and all have high ceilings. So the high ceiling in this one room is excellent for showing prospects how specific fixtures will look in their own high-ceilinged homes."

About 1,200 fixtures in the three display rooms are connected and may be turned on for display purposes.

Main business sources

The company's basic source of fixture business is in connection with its electrical contracts, residential and commercial. A second important source of business consists of homeowners who are remodeling their homes; and a third consists of other electrical contractors who do not stock fixtures.

When the company has the electrical contract for a new home, a Hinote salesman persuades the owners of the new home to bring the plans to the store, see the fixtures, and make selections, with the help and suggestions of Mrs. Hinote or some other qualified fixture salesman.

"Our three display rooms are particularly effective in this type of selling," Mrs. Hinote points out.

An outside salesman calls on architects and other electrical contractors who do not handle fixtures, and talks about the extensive Hinote stock and invites inspection. He asks the architects to suggest to the customer that he buy Hinote fixtures. He asks the contractors to send in their customers to make their fixture selections, with the understanding that the contractors receive the customary trade discount on fixtures selected by their customers.

"We urge contractors to give their customers cards or notes when they send them in to see us," Mrs. Hinote explains, "so that we know they are customers of the contractors. We will not knowingly try to sell fixtures to a customer whose home is being wired by another contractor, unless he sends him to see us.

"In that way we are able to get along with other contractors, even though they are our competitors in the contracting business. They know we respect their rights with their customers."

Novel fixtures sought

Mrs. Hinote stresses that customers of other electrical contractors should bring in their house plans when they come to select their fixtures, so the company can more intelligently advise in the selection.

When the customer of another contractor selects fixtures, the Hinote organization boxes the fixtures and sends them to the contractor at the site of the job, and that ends the transaction.

Mrs. Hinote takes pride in the newness and novelty of much of her fixture stock. "We read everything we can find on new fixtures," she says, "and make every attempt to be the first in this area to stock a new fixture. The more novel it is, the more anxious we are to stock it."

She declares wryly that the uglier a fixture is, the faster it sells, particularly if it is novel. She spends much of her time in search of the new and novel.

"The higher the price, the faster the fixture sells," she declares. In fact, the rate of turnover is reduced by the large stock of staple items on display and in stock.

"I love fixtures," Mrs. Hinote emphasizes. "When I buy a fixture, I try to picture the sort of house and room it will fit into." And sometimes she even has a clear mental picture of the woman customer who will select the specific fixture.

She sends folders featuring certain lines of fixtures to archi-

(Continued on page 64)

customers

a prospect's home

A salesman is discussing fixtures with a prospect in the display room with an eight-foot ceiling. Fixtures shown in this room are those most suitable for use in contemporary homes.

Mrs. V. G. Hinote, left, who buys fixtures for the firm, helps a customer to pick out a fixture from the displays.

The firm encourages wives from families building new homes to inspect the displays and choose fixtures as part of the furnishings.

Style trends in lighting fixtures are discussed in depth by (left to right) Harry Schallam, Sr., secretary-treasurer, Vogue Lighting, St. Louis; Lou Colbert, assistant merchandise sales manager, Emerson Electric; Vic Joseph, assistant general manager, Emerson-Imperial; Walter Hetz, vice-president, Vogue Lighting; and Bill Beckman, Emerson Electric salesman. Mr. Colbert and Mr. Joseph were conducting a 35,000-mile distributor survey in lighting fixtures trends.

Catalog

Manufacturer

By Lou Colbert, Assistant Merchandise Sales Manager, Emerson Electric Co.

◆ One of the most elusive—and exciting—aspects of the lighting fixture business has always been the accurate anticipation of fixture trends.

For many years with many people, it has been little more then a biennial guessing game. Like colors, styling and design are emotional areas and in most organizations it's the easiest thing in the world to provoke heated discussion among designers, sales, and marketing personnel on what type of fixtures (and how many) should be included in a new catalog.

Yet this is one of the most im-

Emerson-Imperial personnel and Obata designers discuss how results of extensive fixture trend survey will be translated into actuality in the new Emerson-Imperial catalog, which is being published this month.

Two architects employed by a St. Louis builder express their opinions on fixture trends to two Obata design directors.

to reflect extensive trend surveys

uses personal interviews to decide on contents of new fixture catalog

portant decisions we ever make in this business. Lighting catalogs are expensive animals. Almost all of them have a life expectancy of 18 months or longer and a wrong guess—that is, failure to anticipate a definite trend—can be a decided disadvantage to both manufacturer and distributor.

The fact that fixtures have always tended to follow—rather than to lead—the styling and design trends established by interior decorators, furniture manufacturers, architects, and others, makes this particularly true.

Regional tastes and preferences are another complicating factor. It is often critical—and difficult—to distinguish between a *regional preference* and a bona-fide *national trend* that simply happens to be starting in that area.

How then do you anticipate fixture trends accurately? How can you be sure that the fixtures you put in your catalog will sell well for your distributors not only when the catalog is introduced, but six months and a year later?

At Emerson-Imperial (subsidiary of Emerson Electric Co.) we developed a three-point approach to this problem which we have carried out for the past two years. Phase one and two were carried out simultaneously and involved (1) personal surveys in depth by top Emerson Electric and Emerson-Imperial personnel and (2) the analysis of information submitted by our sales force in their quarterly engineering reports.

This was a continuing project and was started immediately after the introduction of the last Emerson-Imperial catalog two years ago. Phase three was carried out later and involved a survey by an independent third party.

We recognized at the start that distributors and architects are busy people. We felt that while a survey by mail might produce some answers, without knowing the man who gave these answers and a little of the background behind them, we could make serious misjudgments in our evaluation. For these reasons we decided that our surveys had to be on a personal basis and that they had to be surveys in depth.

Results of distributor survey by Emerson-Imperial on style trends

Question	Answer	Catalog development
Do you now sell more modern, traditional, or transitional fixtures?	56 per cent said they sold more modern (contemporary). 26 per cent said they sold more traditional. 17 per cent said they sold more transitional.	
Would you make an estimate of the major style trends in lighting?	41 per cent of those interviewed said there was an increase toward traditional (Colonial, early American, American provincial).	21 per cent of previous catalog contained traditional styles. New catalog will have 32 per cent.
	32 per cent of those interviewed felt ceramic pendants and colored glass pendants were increasing in popularity.	New catalog will have 36 per cent more fixtures of this type, including ceramics.
What suggestions would you have to make Imperial an even better line for you?	Add more chandeliers—expand outdoor fixtures—increase number of items with antique finishes—add Asiatic, provincial, and early American styles in several categories—Use new and different materials.	Over 100 new fixtures added—Featuring use of colored glass, ceramics, bamboo, plastics, wood. Chandelier styles, pendants, lanterns, etc.

We realized immediately that the biggest drawback from this type of approach would be to interview enough distributors and architects to obtain a true cross section of opinion. Therefore, we began our personal interviews almost two years ago—right after the introduction of our last Emerson-Imperial catalog.

Vic Joseph, assistant general manager, Emerson-Imperial, Latrobe, Pa.; Edward L. O'Neill, vice-president and general sales manager, Emerson Electric Co., St. Louis; Bob Long, chief designer, Emerson-Imperial; and I logged almost 35,000 miles visiting over 150 distributors, in all areas of the country, from coast to coast.

On these calls we made it clear that we were there to discuss styling and design trends only. Because we each had a set of written questions as a guide, we were able, for the most part, to keep our interviews on the subject. It was important to establish this early in the enterview, otherwise it was easy to stray to other specific subjects, such as pricing, order shipments, etc.

Basic questions asked

Although the number of our questions would sometimes vary, we made it a strict rule to always ask certain basic questions on every call. These were:

(1) Do you sell more modern, transitional, or traditional fixtures?

(2) What is your estimate of the most important style trends in lighting right now—and a year from now?

(3) What suggestions, in the areas of style, design, and type of fixtures, do you have to make Imperialites an even better seller for you?

In order to evaluate the answers, other questions were asked about the distributor's own market, types of customers, most popular price class, type of homes *most* common in that area, etc.

As soon as possible after each interview we dictated a report of the call. On our return to the office, each of us went over the entire stack of all the reports and tabulated the main points mentioned. In this way we were quickly able to spot a national pattern of style trends beginning to show up. This information enabled us to explore these areas in more depth in future interviews.

Two points were mentioned in practically all the early interviews: a general demand for more traditionally styled fixtures, and a particular interest in chandeliers. Therefore, in the later interviews when we were told by a distributor, "My customers are buying more Traditional now," we didn't simply let it go at that.

We asked how long had he noticed this? Why did he believe this to be the case? What kind of traditional? And by traditional did he mean Williamsburg colonial, early American, or Provincial (because we soon found that many descriptive terms for periods mean different things to different people in the different parts of the country).

Regular reports

Our regular quarterly field engineering reports, the second phase of our program, cover all product lines of Emerson Electric's Building Products Group. They are sent to St. Louis by our field salesmen and regional sales managers four times a year.

From this we obtain many new ideas for new products and redesigning our present products. They reflect to a great extent a cross section of discussions our sales force has with their distributor and architectural accounts

Again, starting almost two years ago, we asked our salesmen to include in these reports any comments they had received during their calls that might guide us in the style and type of fixtures to be included in our next Emerson-Imperial catalog.

As in our depth interviews, the main points made in these reports were underlined and tabulated and then compared with the patterns that had showed up in our own depth interviews.

In many cases the same pattern emerged, so that we had additional information on some of the trends we had uncovered. In others, we often found new areas to explore in more detail as we conducted our continuing survey by top company personnel.

In several cases where there was some doubt, we asked our salesmen who, specifically, had made certain suggestions and then we would often visit that particular architect or distributor to quiz him more.

An added benefit of this approach, of course, is that when our new catalog comes out this August our salesmen see some of their own suggestions and ideas from their territories translated into new fixtures. Therefore, they feel the added personal interest in presenting it to their accounts.

They also have a better knowledge and understanding of the line and the reasons behind it—and thus are better qualified to pass along to a distributor data that can help him in his business.

Third party employed

The final phase of our program was more or less double checking of our own impressions and the facts that we had already discovered. Realizing that all of us at Emerson Electric were only human and, therefore, somewhat bound by certain deep-rooted, preconcieved opinions (regardless of how impartial we tried to be) we decided to employ a third party to do a spot survey of essentially the same ground we had already covered.

Our choice for this job was Obata & Associates, prominent St. Louis design consultants and art studio, with considerable experience in furniture, fixture, and other general interior design.

Designers from Obata visited distributors, architects, and builders in New York, Los Angeles, San Francisco, Chicago, Dallas, Philadelphia, and Detroit. About 50 per cent of their calls were to distributors who had already been contacted. The other calls were "virgin territory."

The questions asked were virtually the same as had already been asked, with emphasis on what the distributor (or architect) personally felt were the important style trends in lighting. Builders were also asked, "What

(Continued on page 63)

How You Can Eliminate Fluorescent Ballast Noise Problems in Your Buildings

Today's trend toward higher levels of illumination—increasing the number of fixtures, lamps, and ballasts, or increasing the wattage of the lamp/ballast systems—makes fluorescent ballast sound a more and more important building consideration.

General Electric wants you to take full advantage of modern lighting levels. At the same time, you should assure yourself that you can solve any audible ballast "hum" problems in your lighting installation with minimum attention and effort.

ALL YOU HAVE TO DO IS . . .

1. Check each lighting installation *while it is still on the drawing board* with the General Electric Sound Rating Calculator* (see below) to predetermine whether ballast noise will be a problem, and . . .
2. Specify the appropriate *General Electric* sound-rated ballasts for the installation.

That's it. By properly following this two-step procedure, you can predict and overcome potential ballast noise problems before they exist.

General Electric, with five years of highly successful experience in the G-E Ballast Sound-control Program, is confident that this procedure will solve your ballast noise problems. Here's how the program works . . .

THE GENERAL ELECTRIC BALLAST SOUND RATING CALCULATOR is based on data gathered from hundreds of lighting installations over a period of many years. It provides a reliable index of the magnitude of audible ballast sound when room variables such as size, ceiling materials, and number of fixtures and ballasts are known. These calculations are keyed to . . .

GENERAL ELECTRIC'S BALLAST SOUND RATING SYSTEM. This system, initiated by General Electric in 1951, establishes a rigid scale of sound magnitude. Most General Electric ballast designs are carefully compared with this scale in actual fixture tests conducted in the only known anechoic sound chamber in the ballast industry. Each ballast design is thus "Sound-rated" "A" through "F," . . . "A" being quietest, and "F" being least quiet.

The sound-rating scale—and for that matter, the whole sound-control program—is not an industry standard. General Electric has established its own sound standards, and compares the performance of *General Electric ballasts* with these standards.

But the Sound-control Program doesn't end here. In order to give you further assurance that you get the "quiet" you specified, General Electric has established an elaborate . . .

DAILY PRODUCTION SOUND AUDIT. A *daily* sample of production units is carefully compared in sound performance with the G-E sound-rating standard—under controlled conditions in the anechoic sound chamber. This close check on possible manufacturing variations means you get the kind of sound performance that your Sound Rating Calculator promised. The final element in G.E.'s Sound-control Program is . . .

BASIC ENGINEERING DESIGN. General Electric ballast design engineers are constantly examining today's ballast circuitry, trying to further minimize the inherent magnetic "hum" of core and coil assemblies. An example of the results of this engineering effort is the recently announced "A" sound-rated 40-watt, rapid-start line. This popular family of General Electric ballasts was granted a G-E "A" sound rating as a result of *basic circuit design* that produced a smaller and quieter core and coil.

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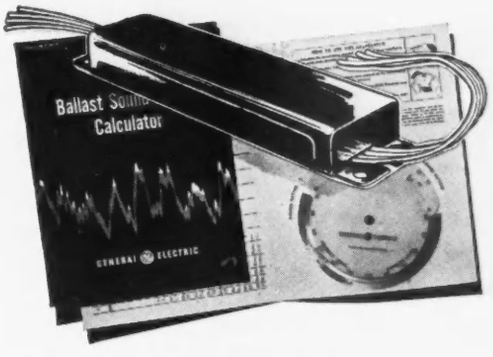

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Low and high bay industrial lighting

Analyzed are cost factors for a wide range of distribution voltages

By Robert N. Edwards, Application Engineer, Lighting Div., Westinghouse Electric Corp., Cleveland, Ohio.*

◆ With today's recommended illumination levels for industrial lighting, we have moved closer to answering that age-old question: "How much light do we need for this job? Now our immediate concern is visual comfort and how to obtain higher footcandles economically.

It has been more than two years since new recommended footcandles were published by the Illuminating Engineering Society. Some said that this was the first time an increase in footcandles was not accompanied by the announcement of a new spectacular light source. This was true, in a sense.

Two years ago no new light source was announced. Yet, even though illumination levels for industrial tasks were approximately doubled, we are in a better position to provide them now than we were, for example in 1952, under the old levels. The 40-watt rapid-start fluorescent lamp has increased 17 per cent in lumen output, so has the eight-foot slimline (425 ma) lamp.

Remember in 1952 there was no eight-foot high-output (800 ma) lamp—now with 60 per cent more lumens than the eight-foot slimline, or an eight-foot extra high output (1,500 ma) lamp—now with 170 per cent more lumens than the eight-foot slimline lamp. In other words, in 1952 we had 5,000 lumens in an eight-foot fluorescent lamp—today we have 15,000 lumens. This is three times the lumens compared to two times the footcandles.

Present illumination levels are geared to provide 99 per cent visual efficiency, assuming the eyes can take in five different items of information per second. Whether or not this degree of performance is achieved, for example the average worker doing "medium assembly" under 100 footcandles, depends upon the so-called "quality" of the illumination. Quality is a term both difficult to define and measure but generally it is associated with such terms as glare, brightness ratios, and diffusion.

With the high cost of labor and machinery, good lighting represents a relatively small investment when one considers its value as a production tool. Good lighting, having the correct quantity and sufficient quality of illumination, is both justifiable and obtainable with current lighting techniques.

The choice of luminaire for use in a low or high bay area is basically one of visual comfort and economics since any luminaire can be used to provide the quantity of illumination desired.

Low and high areas

It is generally agreed that a truss height of 25 feet is the dividing point between low and high areas; however, this is merely an academic point, worth mention only in passing. One might conclude the average height of a high bay area to be 40 feet and the average height for low bays to be 16 feet.

High bays are necessary in the manufacture of rather large three-dimensional objects such as aircraft and for crane clearance in moving bulky material like steel ingots or motor, generator, and transformer parts. Lighting equipment for high bays is normally selected on the basis of economics, since the luminaires will be mounted too far above the normal viewing angles of workers below for glare to be of prime consideration.

The economics of high bay lighting is one of luminaire utilization and maintenance. Luminaires should have a concentrating light distribution, directing as much light as possible on the work task below. For this reason, a high bay luminaire utilizing the 1,000-watt mercury-fluorescent lamp is a wise choice.

The luminaire should have ventilating apertures which will carry both dirt and heat away from the reflector and lamp socket. For particularly dirty or corrosive areas high bay luminaires with gasketed glass door assemblies will be economical. Fluorescent equipment is becoming more and more practical in wide high bay areas, or where specular materials are fabricated.

In any event, however, it is wise to make a detailed cost analysis before choosing the lighting equipment.

Figure 1 shows how both the choice of a 1,000-watt mercury-fluorescent lamp in a high bay luminaire and the choice of distribution voltage can affect the economics of high bay lighting installations.

The savings illustrated for System V of Figure 1 are not new. Not evident from the data are two advantages of the H36 lamp: (1), four per cent more initial lumens; (2), 15 per cent more lumens maintained in service.

The 480Y277-volt distribution system, compared to 208Y120-volt, saved money here: (1), with

*This article is adapted from a paper presented at an industrial lighting conference sponsored jointly by the Chicago Lighting Institute and *Plant Engineering Magazine*.

economics

and luminaires

a smaller cable size or busway required for feeders; (2), because fewer panelboards are required to service the power load; and (3), because economical reactor ballasts for mercury lamps can be utilized. Not included in the analysis is a savings in service entrance switchboard.

Low bays are areas where the truss height is less than 25 feet, where light manufacture and assembly occur, where machine shops are found. Here economics is not the sole criterion by which the choice of lighting equipment is made. Here visual comfort becomes more and more important as luminaire mounting height approaches its lower limit of eight to ten feet.

Figure 2 shows how through proper choice of fluorescent lamp, distribution voltage, and interior surface reflectances, one can purchase 135 foot-candles for the price of 100 footcandles.

The values shown are typical and do not represent every condition. We have always known higher loaded lamps to be more economical, that higher voltage in the power supply saves money. One may not agree with the exact figures, but will agree with the trend. This does not represent all the savings—the real economy is in the many benefits to be obtained.

Visual comfort

Workers having maximum visibility and maximum visual comfort can and want to do only one thing—work faster with greater accuracy. As a natural result production rate increases and rejects drop off. These are the real economies of good lighting practice.

As was mentioned previously, we are moving closer to answer-

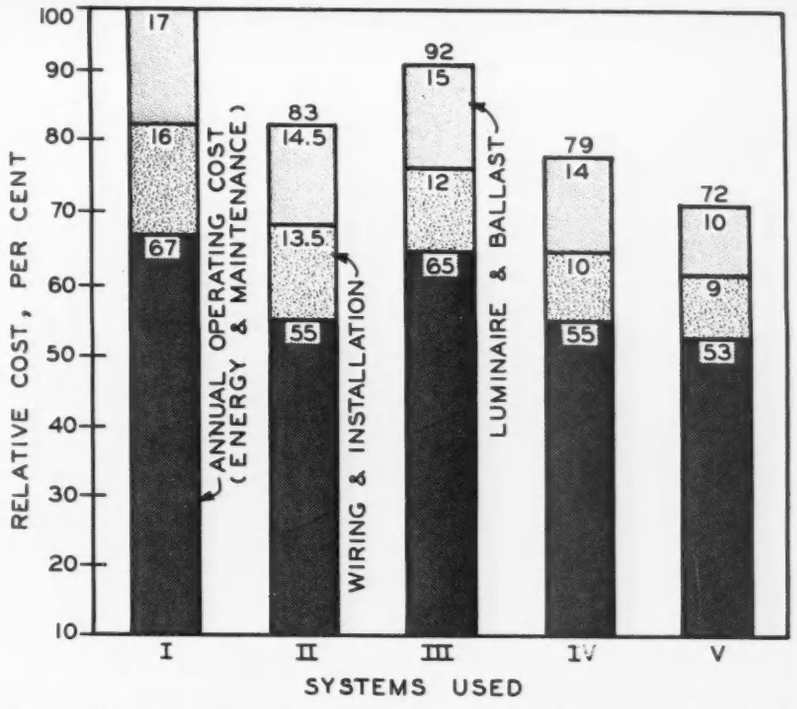


Fig. 1—Shown are relative costs of high bay lighting installations with various voltages and mercury-fluorescent lamps. Systems indicated are: I—120 v, H34-12GW/C; II—120 v, H36-15GW/C; III—277 v, H34-12GW/C; IV—277 v, H36-15GW/C; and V—480 v, H36-15GW/C.

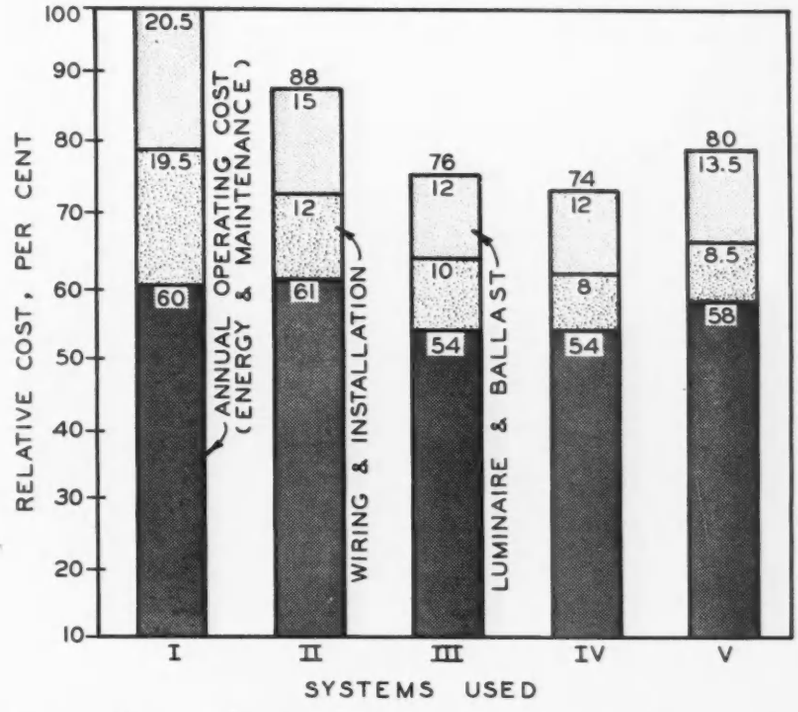


Fig. 2—This is a comparison of the relative costs of five low bay lighting installations for various fluorescent lamps, distribution voltages, shielding angles, and reflectances of interior surfaces.

System	Luminaire	Shielding	Reflectances	Distribution
I	2-lamp (425 ma)	13°	50/30/10	120 volts
II	2-lamp (1,500 ma)	13°	50/30/10	120 volts
III	2-lamp (1,500 ma)	13°	70/50/10	120 volts
IV	2-lamp (1,500 ma)	13°	70/50/10	277 volts
V	2-lamp (1,500 ma)	27°	70/50/10	277 volts

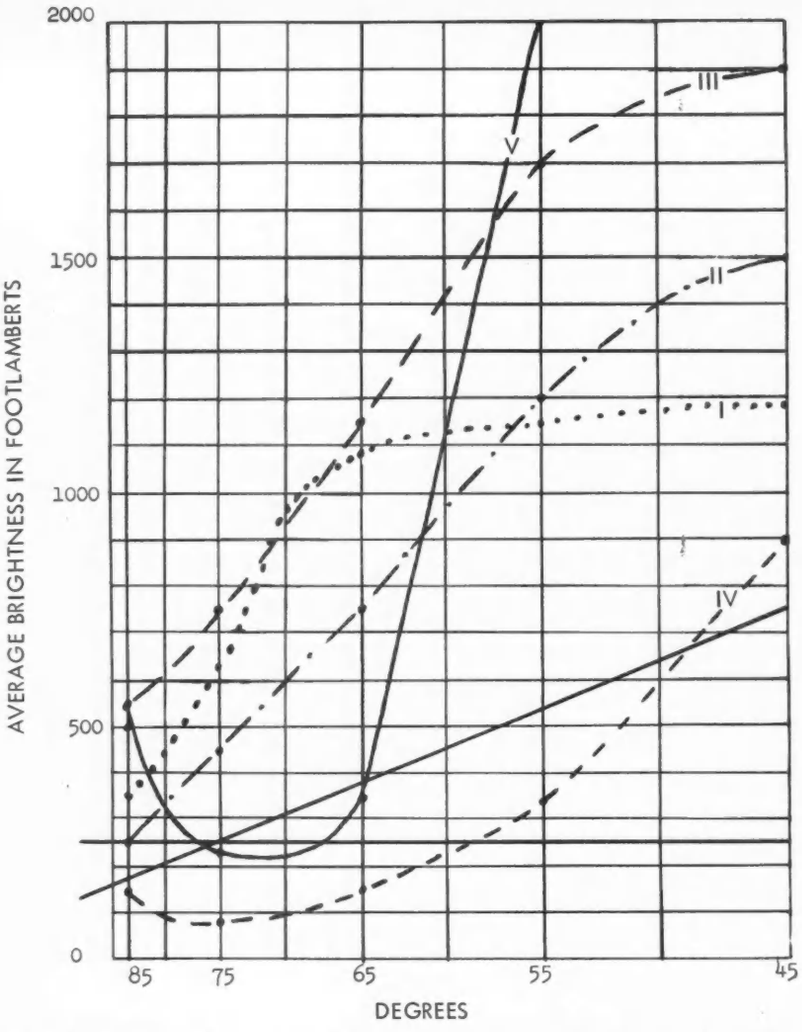


Fig. 3—These are five curves of crosswise average brightness for industrial eight-foot fluorescent luminaires and one mercury unit.

Curve	Luminaire	Shielding	Reflector	Initial lumens
I	2-lamp (425 ma)	13°	white enamel	12,800
II	2-lamp (800 ma)	27°	white enamel	18,000
III	2-lamp (1,500 ma)	30°	white enamel	30,000
IV	2-lamp (1,500 ma)	27°	specular aluminum	30,000
V	400-watt mercury-fluorescent lamp		specular aluminum	20,500

TABLE I

Minimum mounting heights guide for industrial lighting

Minimum mtg. ht.	Incandescent	Fluorescent	Mercury-fluorescent
8′	100w–200w	4′, 6′, 8′ 425 ma	——
12′	300w–500w	90 w preheat (1,500 ma)	——
14′	750w	4′, 6′, 8′ (high output) 800 ma	——
16′	1,000w	4′, 6′, 8′ (extra high output) 1,500 ma	400w, H33 types
18′	1,500w	——	——
22′	——	——	700w, H35 types
25′	——	——	1,000w, H34 & H36 types

Note: Use of louvers will allow lower minimum mounting height.

ing that question "How many footcandles?," but, we have not in all these years been able to resolve this question: "How much visual comfort do we need for this job?"

Quality in lighting is associated with terms such as glare, brightness ratios, and diffusion. Glare has been ably described as "brightness out of control." Two forms occur—direct, from some form of light source whether it be luminaire or window, and reflected, which is the image of this light source in the visual task. Only direct glare will be considered here.

The IES scissor curves of limiting average brightness for commercial luminaires are well known. Although there is no definite limit for industrial luminaires, it is stated that the brightness in the shielded zone should be less than 452 footlamberts and preferably never above 675 footlamberts.

Figure 3 shows some of the crosswise average brightness curves for industrial eight-foot fluorescent luminaires and one mercury unit.

As Curve IV of Figure 3 shows, excellent brightness control of the 1,500-ma lamp is possible. Average brightness, while extremely important, is not the sole criterion of visual comfort. In narrow high bay areas many luminaires will not be viewed in the 45- to 85-degree direct glare zone. Both mounting height and room area determine how much visual comfort a lighting installation will have.

Brightness ratios

For a given area, as mounting height increases, higher luminaire brightness can be tolerated. For a given mounting height, as area increases lower luminaire brightnesses will be necessary. Minimum mounting height guides have been published in the past by lighting equipment manufacturers, as illustrated by Table I.

Visual comfort is also dependent upon the brightness ratio, between luminaire and ceiling, between task and surrounds, and as such ratios approach unity seeing

(Continued on page 62)

New lighting in a clerical office

By Gerald L. Brown, Commercial Lighting Representative, Pacific Gas and Electric Co., Fresno, Calif.

◆ The Peerless Pump Division of Food Machinery and Chemical Corporation decided recently to relight its clerical and accounting office at Fresno, Calif.

The office was then lighted by a combination of open industrial and louvered commercial fixtures employing daylight and standard cool white lamps. Their lighting system provided about 40 foot-candles and an abundance of glare sources.

In relighting this office, we were faced with the problem of providing a high intensity, low brightness system in a low ceiling area which precluded the use of indirect fixtures. The job was fur-

(Continued on page 63)

Before and after photos show what relighting did at Peerless Pump Div.

Model home dramatizes lighting

Once again a well-lighted house demonstrates the beauty that results when imagination and careful planning are blended and used extensively

By Albert S. Keshen, Field Editor, Newark, N. J.

◆ Special lighting equipment, including units with which the public ordinarily is unfamiliar, recently drew throngs of sightseers to the Kenwood Garden model home near Cleveland, Ohio. They examined with considerable interest the units put on display in the $42,500 tri-level model home, located in the Gates Mills Community by Village Realty.

Lighting was shown for its decorative as well as illumination effects in all rooms of the furnished home. Exterior lighting included 14 lighting fixtures and three floodlamps.

About $2,000 in special lighting equipment was set up throughout the house. While the exhibitors did not expect such an elaborate lighting setup to be purchased in its entirely by home buyers, their purpose in such a wide and varied display was to afford visitors an opportunity to see every facet of new lighting equipment so they could make a wide selection.

At the entrance, the slate foyer has a pair of opal pendants whose glow is reflected by a bluish-gray, metallic-foil wall. Scroll type, wrought iron gates swing open from the foyer to the L-shaped living and dining room with a convex, brick fireplace.

In this combination room are 12 fixtures, including sculptured opal pendants and recessed lights. Light from the ceiling is focused

A luminous ceiling provides shadowless kitchen light. The suspended fixtures each use a 100-watt lamp.

A gracious, inviting appearance is given to the house by the use of weathertight 100-watt outdoor fixtures.

Two open pendants give a touch of elegance to the foyer. Living-dining room is at the left.

Twelve fixtures light the L-shaped living-dining room. The recessed fixtures each use a 150-watt lamp, each pendant a 100-watt lamp.

on the major pieces of furniture in the combination room.

The kitchen has a luminous ceiling of decorative, laminated plastic which provides light without shadows in the cooking area. Two shaded fixtures are suspended over a breakfast bar that separates the kitchen and family room. There are six ceiling lights in the cherry-paneled family room.

Installed in the bedrooms are seven ceiling lights or hanging fixtures. Florentine lights were placed on each side of a dressing table in the master bedroom. Similar fixtures flank a canopy bed in a bedroom which is called "the girl's room."

In the main bathroom, a powder room effect is achieved with the subdued light of striped opal pendants. For brighter light, there is also a luminous ceiling.

Spotlights illuminate a rear patio adjoining the recreation room.

"While we have a large home with 2,628 square feet of living area, we require only six portable lamps to furnish it," said John Koerber, who is associated with his brother, Charles Koerber, in the building firm that erected the house. "Other advantages of the built-in lighting system are the dimmer switches that can control the amount of light and set the mood for each room."

With few exceptions, the fixtures shown are from the commercial line of the John C. Virden Co., and are being promoted for residential use for the first time. They are of the type that might be expected to be found in fashionable stores and shops. Decorating was done by Miss Helen Isbell, of the May Co., Cleveland.

The home was one of 20 built in the development.

The same type recessed fixtures used in the living-dining room light the patio. Kitchen is seen at right.

100 footcandles for gym

New Hershev facility gets three times usual illumination recommended for such installations

By Maurine Miller Welch, Lighting Field Editor, Columbus, Ohio.

◆ A gymnasium so well lighted that movies and other action photos of sporting events may be shot without supplementary lighting is the Hershey Foundation's most recent donation to Pennsylvania's Derry Township School District.

The lighting in the gym is supplied by 80 Guth fixtures equipped with suitable guards, each containing two 96-inch Power Groove fluorescent lamps. Each lamp has an initial light output of 15,000 lumens. The fixtures are mounted so as to give the playing area a 22-foot clear ceiling height.

An auxiliary gymnasium (44 by 64 feet) has 18 of these same fixtures with the same individual output of light. The illumination level is calculated to be more than 100 footcandles on each of the gym floors. This is especially adequate in view of the fact that the recently revised "Current Recommended Practice for Sports Lighting," issued by the Illuminating Engineering Society, recommends a minimum of 30 footcandles for gymnasiums in which exhibitions and matches will be held.

The larger gymnasium (100 by 110 feet) will be used for baseball fielding practice, tennis practice (four courts at a time), wrestling, and basketball. A folding partition to form two smaller gymnasiums is hydraulically operated and lifted six inches above the floor for easy opening and closing without damaging the floor. There are two electrically operated score boards, one with a wrestling attachment.

The two gymnasiums are located in a sturdy brick building which also includes a large lobby with two ticket windows, a refreshment area, and locker rooms for 1,860 students, as well as shower and locker facilities for visiting teams.

The large gymnasium seats 1,600 persons; the smaller gym will be used for classes, corrective work, physical therapy, and dances.

Eighty Guth fixtures, each lamped with two 96-inch Power Groove 15,000-lumen units, and mounted 22 feet above the floor, light the main gymnasium of this Hershey, Pa., school to an intensity of 100 footcandles.

Other lighting features of the building include recessed fixtures in the main and rear lobbies. These units, furnished by Kirlin, are lamped at 150 watts. The main lobby is lighted to an intensity of 60 footcandles at a level five feet above the floor.

Art Metal drum-type fixtures were installed in the lower hall, stairways, and locker rooms, and lamped at 100 watts each. Eighteen footcandles are provided in the locker rooms and showers.

In case of failure of the main lighting source, a five-kw gasoline-driven emergency generator will automatically go into operation. Emergency lights are placed throughout the building at all strategic locations such as stairs and exits.

Plans for the new building were drawn, and construction supervised, by Terrence G. Faul and George Supplee, of the Hershey Lumber Company staff. Electrical work was supervised by Peter Ponzoli, head of the electrical department of Hershey Estates.

Home lighting

(Continued from page 27)

Vertical lighting predominates in the living room. Three recessed adjustable eyeball fixtures from Thomas Industries, Inc., are installed over the fireplace using R-20 bulbs, while valance lighting is used over the large picture window. Strategically located portable lamps also add to the vertical illumination effect, with a play of light on the wall above and below each lamp.

In the early American kitchen and dining area, lighting fixtures were chosen to give high illumination, yet carry out the decor. Western lighting fixtures made by Becker Manufacturing Company answered both needs.

Valance lighting is used again in the bedroom, this time for its soft effect of beauty. Both here and in the living room, valances are placed out from the wall so that light is bounced off the ceiling. Virden strips are used in all valances throughout the home.

Outside the home, six Halo recessed fixtures are installed in the overhang, and Hinkley carriage lanterns are located on either side of the front door.

Lighting of stained glass dome involves special installation

By R. B. Hendrix, Job Foreman, M. C. Dean Electrical Co., Falls Church, Va.

◆ In the lighting design for St. Michael's Church, an octagonal structure surmounted by a stained glass dome, there were several objectives. The streaming sunlight brought into the nave of the church during the day was to be simulated after sundown in a slowly intensifying twilight with light coming from apertures in the dome. The brilliantly colored stained glass windows of French import were to be lighted up from inside the dome to appear like a crown of jewels from over the rise of the hill. Lighting maintenance had to be considered.

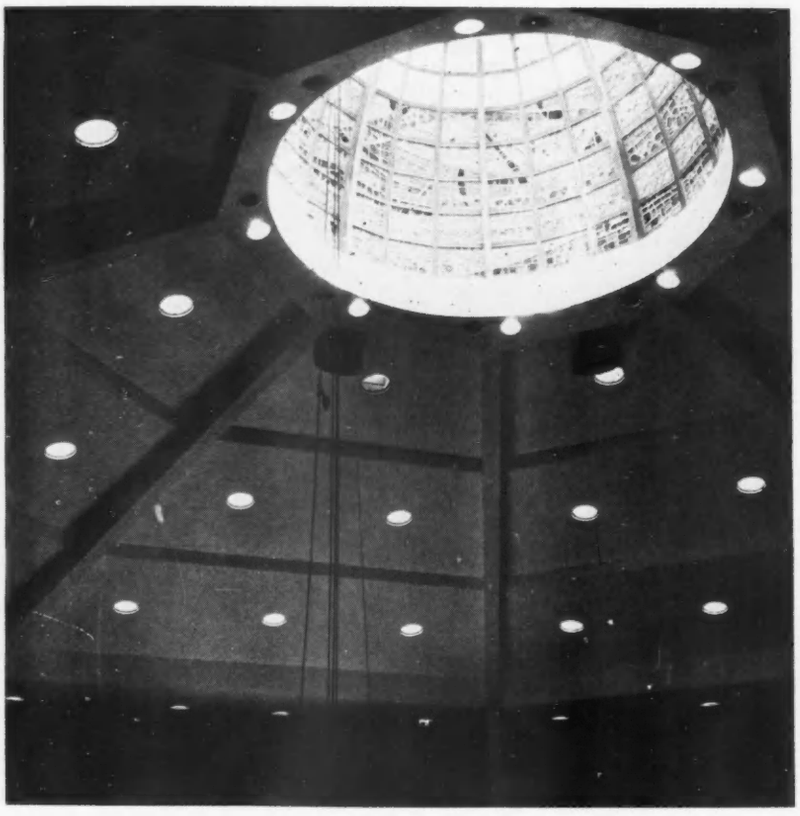
To obtain light streaming from the dome, a series of different levels of light without a dimmer were arranged in overhead lighting of 40 circuits in the ceiling, each circuit going to a different circuit breaker. A slow intensification of light was made possible from total darkness to simulated bright streaming sunlight. Each aperture in the domed ceiling has four 150 watt lamps.

Illuminated from the inside with a fixture that admitted sunlight into the church, the stained glass dome became a brilliant spectacle at night. An opening in the sky dome permits easy accessibility for maintenance of lighting fixtures.

About 95 per cent of all lights used on the job were recessed lights. An impressive effect of a series of 16 columns of light was achieved through recessed light of 150 watt flood bulbs in the soffitt of the overhang of the church entrance. The church's chapel has unobstructive cove lighting of 8-ft. fluorescent fixtures. The cloistered walks around the church are well lighted with an airport type of light 12-in. above the ground fanning out light.

In the execution of this job, several time and labor saving procedures were employed. All conduit was extended through the

(Continued on page 62)



Aperture in the dome permits daylight to stream through, and conceals lighting units that slowly flood the nave after sundown and light up the brilliantly colored stained glass forming inside of dome.

Electrician installs boxes for recessed fixtures that floodlight the baptistry. These units are wired with flexible metal conduit.

Time saver used on the job was a power stud driver. It was used for mounting boxes and hangers to steel or concrete surfaces.

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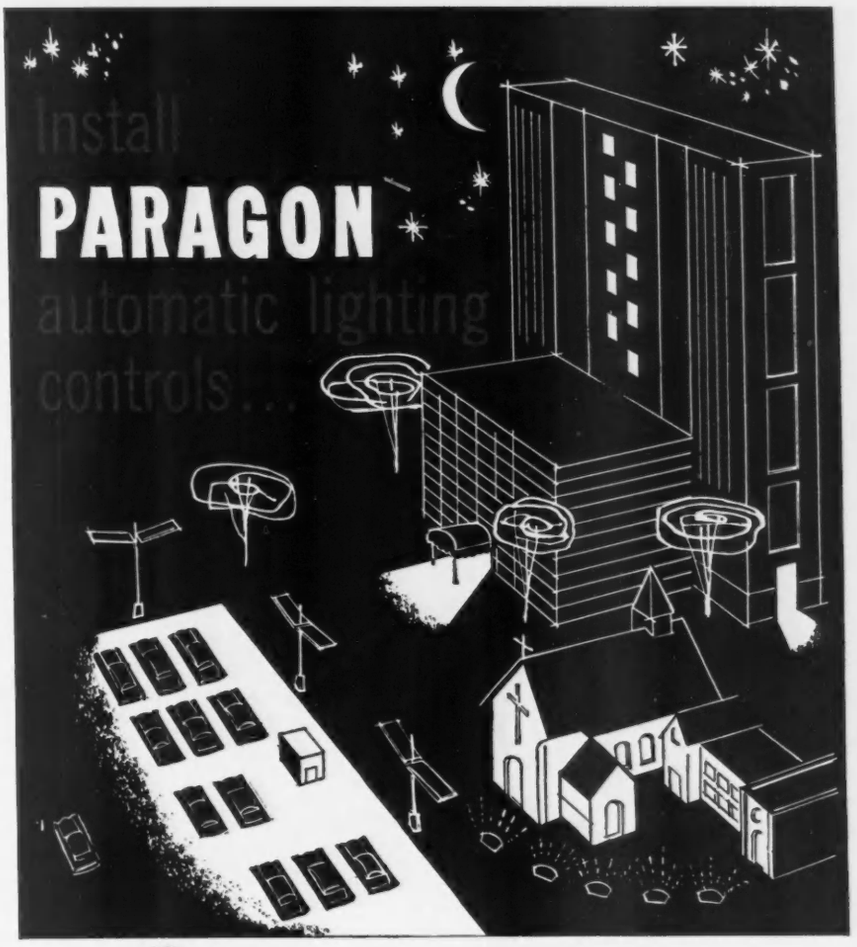

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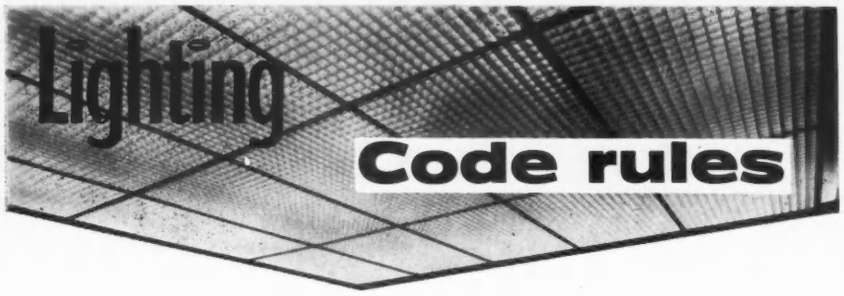

Special rules govern use of lighting in theaters and places of assembly

By Walter R. Stone, Contributing Editor on Code Rules, Utica, N. Y.

◆ Special lighting rules applying to theaters and places of public assembly were discussed in the July issue, and in this issue we continue with a discussion of these special rules.

Portable switchboards are required by Section 520-51 of the Code to be supplied through, and only through, outlets provided specially for the purpose. These special outlets are required to be provided with circuit breakers or enclosed fused switches.

Such circuit breakers or enclosed fused switches are required to be mounted in locations which are readily accessible from the stage floor. Where house (permanent) switchboards are readily accessible from the stage floor, the circuit breakers or switches may be mounted at the house switchboard.

But where house switchboards are not readily accessible from the stage floor, such circuit breakers or switches supplying portable switchboards must be mounted on the stage wall.

Circuits supplying equipment containing incandescent lamps of not over 300 watts from portable switchboards are required by Section 520-52 to be protected by overcurrent devices not exceeding 20 amperes in rating.

Lampholders of over 300 watts which are the fixed, heavy-duty type are permitted to be supplied from portable switchboards by any standard size circuit, including a 30- or 50-ampere circuit, which is properly protected by overcurrent devices which do not exceed the current-carrying capacity of the branch circuit conductors. (Standard size circuits, as defined by Article 210, are 15-, 20-, 30-, and 50-ampere sizes.)

Little-known rules

There are many little-known Code restrictions which apply to various types of portable equipment before such equipment is permitted to be utilized on stages for lighting effects in theaters and assembly halls. For instance, portable stage switchboards must conform to the following requirements:

(1) Enclosures must be of substantial construction and, if of wood, must be completely lined with 24 USS gauge sheet metal which is inherently corrosion-resistant or which has been effectively protected against corrosion by a suitable corrosion-resistant coating.

(2) Except for dimmer face plates, no exposed live parts are permitted within the enclosure. Dimmer face plates are required to be arranged to prevent or to minimize accidental contact with live parts, and the dimmer terminals are required to be enclosed.

(3) Switches and circuit breakers are required to be of the enclosed, externally operable type. Enclosures are required for all overcurrent devices in addition to the switchboard enclosure. Overcurrent devices are required to be provided in each ungrounded conductor of every circuit supplied through the board.

(4) All conductors within the switchboard enclosure, except cables feeding to or from the board, are required to be stranded and suitable for an operating temperature of 200 C. All conductors are required to be enclosed within metal troughs or securely fastened in position and bushed where they pass through metal. Cables feeding to or from the board are required to be bushed where passing through metal and terminated in such a manner as to prevent any strain on the terminals. Terminals are required to be accessible.

(5) Supply cables are required to be types K, S, SO, or ST and to terminate in an externally operable master switch or master circuit breaker.

(6) A pilot light is required to be provided within the switchboard enclosure. This pilot is required to be connected on the line side of the master switch or circuit breaker and protected by an overcurrent device not exceeding 15 amperes. No other connection or load is permitted on this special pilot light circuit.

Portable stage arc lamps

Portable stage arc lamps must conform to the following requirements:

(1) Portable arc lamps are required to be substantially constructed of 20 USS guage or heavier metal and approved insulating material where needed. The frames of standards are required to be so installed and guarded as to prevent their becoming grounded. Mica insulation is required to be used for the lamp frame insulation.

(2) The enclosure is required to provide needed insulation and to prevent the escape of sparks. It must be so designed that the carbons or live lamp parts will not make contact with the hood.

(3) Hoods for lens lamps are permitted to have stationary fronts and solid doors on the back or side. But hoods for other than lens lamps are required to have the front openings equipped with self-closing, hinged door frames on which must be mounted either wire gauze or glass..

(4) Rheostats are required to be enclosed within substantial,

(Continued on page 62)

Wanted: Manuscripts

The editors of Lighting will welcome contributions from the field for publication. Electrical contractors, lighting consultants, electric utility lighting engineers, and others closely associated with the lighting industry are invited to submit articles, photographs, and drawings relating to important lighting installations and developments anywhere in the United States. All articles will be given careful consideration and payment will be made promptly for all material accepted for publication. Write for your copy of Lighting's "Author's Guide." Address all communications to

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TWO 100's WON'T DO THE WORK OF ONE 200

A 200 watt incandescent lamp produces approximately 3800 lumens. Two 100 watt incandescent lamps produce approximately 3400 lumens — about 10% less light.

YOU CAN CHECK YOUR LIGHTING AGAINST RECOMMENDED LEVELS FOR ALMOST 700 DIFFERENT JOBS

The Illuminating Engineering Society publishes Foot-candle Tables of Recommended Illumination (1958) for seeing tasks in many different categories and industries.

THERE ARE OVER 3,000 TYPES AND SIZES OF CHAMPION LAMPS

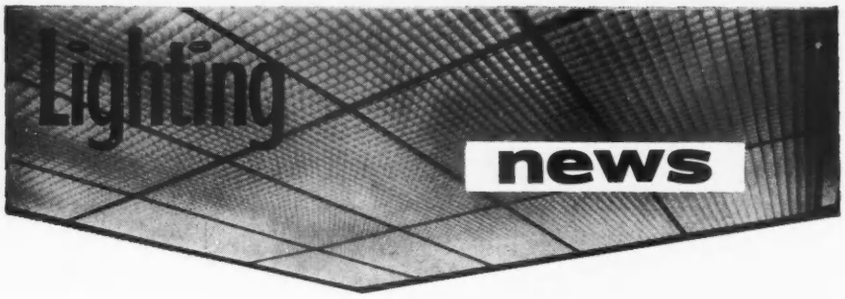
More than 3,000 different Champion Lamps are available to satisfy the diversified lighting needs in office buildings, homes, department stores, ball fields, theaters, factories, shops, garages, showrooms, railroads, airports, restaurants, streets, parks, schools, and many other installations.

Your Best Buy in Lamps

CHAMPION LAMP WORKS, Lynn, Massachusetts

CHAMPION INCANDESCENT-FLUORESCENT

For more details on above items, use reply card on page 17.



Tower of light planned for World's Fair exhibit

A TOWER OF LIGHT expected to be visible from as far away as Boston, Mass., and Washington, D.C., and described as "the greatest concentration of light ever generated," is planned as part of the investor-owned electric utility companies' exhibit at the 1964-1965 New York World's Fair. Ernest R. Acker, chairman of the board of Central Hudson Gas & Electric Corp., made the announcement recently before the 29th annual convention of the Edison Electric Institute.

Mr. Acker, who also serves as chairman of the EEI World's Fair committee and president of Power & Light Exhibit, Inc., the company set up to administer the electric companies' participation in the fair, said that the beacon would be 24 billion candlepower. It will help focus the public mind on the electric companies' exhibit and on the fair itself, he said.

The tower of light, developed by 24 "light cannons," each of 1 billion candlepower, will be based in a rainbow-colored building 80 feet high, located on the main traffic artery from the principal entrance to the fair.

Describing the interior of the exhibit building, the utility executive said that visitors would be conveyed on a moving ramp to the top floor of the structure. From there they will begin a spiral walk downward, across flat exhibit floors, separated by easy ramps or steps. A series of displays along this path will present various aspects of electric industry operation.

Mr. Acker indicated that the sequence and nature of the displays had not yet been finally determined. He pointed out that new inventions and developments in the electric industry "come so fast that we cannot firm up our over-all exhibit plan until the last possible moment. What we view as exciting and futuristic in 1961 may be only comfortably old-hat in 1964."

The electric companies' exhibit is being designed by V-E-K Associates. Mr. Acker stated that preliminary estimates indicate a cost of $6 to $7 million for the entire Power & Light Exhibit project, a figure which is "of the same order of magnitude as the estimate exhibit costs of other organizations of similar character."

Electric utility companies will be represented in the 1964-65 New York World's Fair by this tower of light.

"We have here an unparalleled opportunity to make contact with millions of our customers in a truly face-to-face way," Mr. Acker said. "For this reason, we plan to have an exhibit that will be one of the fair's principal attractions—and that will tell our industry's story as it has never been told before."

IES group to present fourth lighting show

THE FOURTH annual Exposition sponsored by the North Texas Section, IES, will be held on Friday November 3, 1961, in the Commercial Exhibits Building of the Will Rogers Memorial Buildings, 3401 West Lancaster Ave., Ft. Worth, Texas.

Concurrent with the exposition will be a lighting symposium and a demonstration or presentation by a prominent speaker, which will follow the theme of the exposition.

Reservations for booth space or additional information about the exposition may be obtained by writing to William F. Owens, Jr., Chairman, Lighting Exposition, 7160 Baker Blvd., Fort Worth 11, Texas.

Those invited to attend the exhibit include section IES members, electrical distributors, architects and associates, electrical contractors, building and plant superintendents, electrical engineers, public utilities, school personnel, and governmental personnel and engineers.

Exhibitors will include sustaining lighting fixture manufacturers or fixture manufacturers represented by local IES members.

CBM plans sound tests for electrical ballasts

WITHIN a matter of months Electrical Testing Laboratories, Inc., expects to have completed its development of a standard method whereby certified ballasts will be classified with respect to sound. The Board of Trustees of the Certified Ballast Manufacturing Association has accepted the recommendation of the CBM technical committee as to the steps to be taken in seeking the establishment of such a system.

ETL, the independent laboratory that tests CBM ballasts for conformance to specifications, will also test for sound when a standard sound rating procedure and a system of sound classification of ballasts in fixtures for use in various noise ambients has been agreed upon.

It is predicted that it will take several months to set up the needed facilities and to complete the tests and investigations to provide basic data necessary for CBM to develop the proposed system.

The CBM technical committee's report recommended the use of the Hayes-Gould method of sound measurement with certain modifications.

Several ballast manufacturers have already set up sound rating systems for their own ballasts, but until the CBM rating method and classification system are available, there is no standard basis for comparsion between different producers' ballasts.

Holophane names Keller president of company

CLARENCE C. KELLER has been named president of the Holophane Co., it was announced recently. Charles Franck, president since 1929, continues as chief executive and chairman of the board.

Mr. Keller joined the company as test engineer in 1929 after graduating from Ohio State with a degree in electrical engineering. He advanced steadily at Holophane, becoming manager of application engineering, sales manager, vice-president in charge of sales, executive vice-president, director, and now president.

He is also vice-president and member of the board of governors and officers committee of the National Electrical Manufacturers association. He is active in the Illuminating Engineering Society and has been general secretary, director, and vice-president of the society.

Clarence C. Keller

Southwestern manager announced by Progress

THE APPOINTMENT of Sam Humphrey as regional manager of the Southwest has been announced by Progress Manufacturing Co., and Mr. Humphrey has, in turn, announced the appointment of Clay Hathcock as representative for northeast Texas and Oklahoma.

Mr. Humphrey, who has been associated with Progress for six years, will have his headquarters in Dallas.

Territory covered by the Southwest office includes Kansas, Nebraska, Oklahoma, and Texas.

Mr. Hathcock has recently spent 12 years in Saudi-Arabia, handling procurement for the construction division of Arabian American Oil Co.

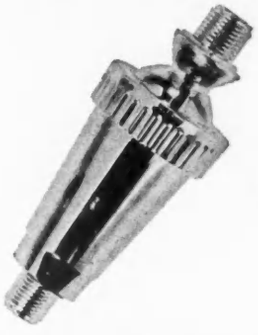
John G. Beam

Beam named as head of Thomas Industries

JOHN G. BEAM was elected president of Thomas Industries Inc., Louisville, Ky., by the firm's Board of Directors in Chicago, it was announced recently.

Mr. Beam, 41, has been executive vice-president of Thomas Industries for the past three years. As president he succeeds Lee B. Thomas, who continues as chairman of the board and chief executive officer.

Prior to joining Thomas Industries, Mr. Beam was executive vice-president of American Saw Co.



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The answer to your swivel Problems!

For smoother tension ... stronger gripping power ... extra durability ... This modern design offers you the following features: Large non-wearing nylon bearing. Attractive streamlined design. Positive adjustment in any direction. Quick, easy assembly. Straight, push-thru wiring. Interchangeable components. Also available in hand-adjusted model.

In addition, SIDE A LITE gives you prompt, on-time delivery. Phone or write for price list and additional information. Samples will be furnished to qualified users upon request.

Your choice of attractive finishes:

Polished Chrome	Polished Copper
Satin Chrome	Satin Copper
Polished Brass	White
Satin Brass	Black

Special finishes upon request.

Dimensions:

Standard Model (Photo above) ..... 2¾" x 1"

Deluxe Model ..... 3¾" x 1"

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IES elects Chambers and other new officers

JAMES R. CHAMBERS was elected 1961-1962 president recently for the Illuminating Engineering Society, A. D. Hinckley, IES managing director, announced. Mr. Chambers is sales manager of Lighting Products Div., Appleton Electric Co.

Other officers also elected to begin serving in October of this year include J. Dixon Mitchell, Southeastern region engineer, Lamp Division, Westinghouse Electric Corp., who was elected vice-president, 1961-1963, and Charles L. Amick, director of research and development, Day-

James R. Chambers

Brite Lighting, Inc., elected general secretary, 1961-1962. G. Franklin Dean, Toronto Hydro-electric System, Toronto, continues as vice-president for a second term.

The new treasurer for 1961-1962 will be Arthur C. Barr, manager of product planning, Lamp Division, General Electric Co., Cleveland.

Elected as directors, 1961-1964, were J. M. Chorlton, superintendent of maintenance and construction of the Toronto Board of Education; and William P. Lowell, Jr., manager of technical liaison and quality control services, Sylvania Lighting Products.

The election of regional vice-presidents also was announced. Elected for 1961-1963 were: Inter-Mountain Region, Robert W. Godemann, Phoenix, Ariz., lighting consultant for Arizona Public Service Co.; Southwestern Region, Robert G. Turpin, San Antonio, Tex., district engineer for Sylvania Lighting Products; Canadian Region, J. Paul Cristel, manager, residential and rural sales, the Shawinigan Water and Power Company, Montreal, Quebec.

East Central Region, J. Shelton Ragland, Richmond, Va., director, commercial sales, Virginia Electric and Power Co.; and Southeastern Region, T. L. Cordle, associate and manager of Electric Department, J. N. Pease and Company, Charlotte, N. C.

New concept in lamp developed in Finland

A REVOLUTIONARY design in incandescent lamps, developed by Finnish engineers attracted the interest of lighting experts, architects, decorators, and designers when it was displayed at the 1961 Chicago International Trade Fair, held recently in McCormick Place Chicago.

The lamp, which makes fixtures and shades unnecessary, represents an entirely new concept in room lighting. Its unusual design and size are combined with special technological characteristics discovered by the manufacturer, Cy Airam Ab, of Helsinki.

Finland displays new concept in lamp bulb at Chicago International Trade Fair which began July 25.

The inner bulb surface of the lamp is coated with fine white powder, allowing for even diffusion and additional light not provided by regular white opalized bulbs. The lamp is gas filled, and has an average life of 1,500 hours.

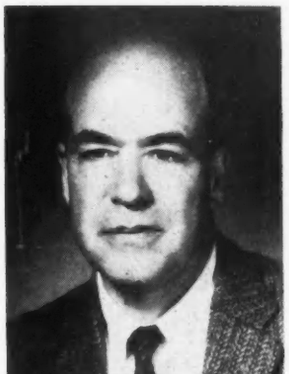
The new Finnish incandescent lamp was designed by Tapio Wirkkala, world famous artist and designer. It already has won international acclaim, having been awarded the grand prize at the Milan Triennale exposition in 1960.

The lamp is designed for both home and commercial uses.

Champion names Ferris general sales manager

RECENTLY APPOINTED general sales manager for the Champion Lamp Works is Willard S. Ferris. Douglas H. Davis has been named assistant sales manager of the company.

Both Mr. Ferris and Mr. Davis are widely known in the electrical



Willard S. Ferris

and lighting industries. Mr. Ferris was a sales and merchandising executive with Sylvania's Lighting Division for many years, followed by the sales and advertising managership of Lowell Insulated Wire Company and, before coming with Champion, a sales executive at Bomac Laboratories, Division of Varian Associates.

Mr. Davis has been associated with George H. Wahn Co., prominent New England electrical distributor, for the major part of his business career, serving as vice-president and sales manager.

Symbolic lighting of a street lamp inducts Norman R. Sutherland, right, president of Pacific Gas and Electric Co., into the Lamplighters of America, a new traffic safety organization. Looking on, left to right, are street lighting engineers B. B. Howard, Harry Edwards, R. E. McKillikan, J. H. Burson, and G. A. Trosper, all charter members of the Lamplighters.

Lamplighters promote safety street lighting

A STREET LAMP-LIGHTER who rose to the presidency of one of America's largest electric utility companies, Norman R. Sutherland, president of Pacific Gas & Electric Co., San Francisco, has been inducted as honorary member Number One of "The Lamplighters of America," launching a new national organization to promote safer night-time travel.

Mr. Sutherland was presented with a certificate of his membership after pledging himself to "promote and further the safety of Night Owls, wheresoever dispersed on public ways" and symbolically lighting the organization's standard, a model of a street lamp bearing the street intersection signs Clay & Dupont.

Dupont is now Grant Avenue, heart of San Francisco's world famous Chinatown. At the intersection stood one of the original lamps of the San Francisco Gas Co., founded in 1852.

Mr. Sutherland began his career with that company's successor, PG&E, as a high school boy, lighting lamps at dusk and snuffing them out in the morning. In 1913, he went to work full time as a clerk, and 10 years later was commercial manager of the company.

The "Lamplighters of America" has been formed as an off-shoot of the Illuminating Engineering Society, national organization of the lighting industry. The 50 charter members call themselves "Doctors of Lumenology" and seek "better lighting of America's streets and highways for the common good and the safety of the traveling public."

James H. Burson, street lighting engineer for Westinghouse Electric Corp., San Francisco, is chairman of the founding body.

Mr. Burson will be succeeded by the chairman-elect, B. B. Howard, engineer of the Bureau of Light, Heat, and Power, of the City and County of San Francisco.

IES panelists discuss light sources and uses

A PANEL discussion on light sources and their application was conducted by members of the North West Ohio Section, Illuminating Engineering Society, at a meeting at the University of Toledo, Toledo, Ohio recently.

With John W. Felkey, of the Toledo Edison Co., serving as moderator, the panel discussed three major light sources—fluorscent, filament, and mercury — and their application to various areas of commercial and industrial lighting.

Panelists included William Wellstead and Ora Apple, "Filament Lamps;" Ribert Pippenger and Homer Ferguson, "Fluorescent Lamps;" and Bruce Millar and Rodger Rogers, "Mercury Lamps."

Each team consisted of an area lamp representative and a professional engineer, both being members of the North West Ohio Section.

The first presentation by all three teams was the proper application of filament, fluorescent and mercury in today's modern industrial shop. In all cases the higher footcandle levels

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Dafforn management and production has collectively had over forty years experience in producing quality ballasts.

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Both large and small buyers benefit from mass production facilities offering most competitive prices.

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Highest quality standards of construction throughout backed by a 4 year guarantee.

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were discussed by all of the team members.

Particularly interesting was the discussion by the team representing the filament source on the use of the new quartz iodine filament lamp for industrial shop lighting.

The fluorescent team, of course, stressed the use of the new higher output fluorescent lamps and their correct application in an industrial shop.

The mercury team made some salient points as to the use of mercury lamps in high bay areas, as well as use of color improved mercury in some of the newer equipment for low mounted heights in industrial areas.

The second presentation centered around the correct application of the three light sources for outdoor commercial lighting, or "Light That Sells." The illumination of used car lots and the comparative merits of each lamp source for this type of application was discussed by all three teams.

In this connection, the filament team brought in future possibilities of the filament quartz iodine lamp in outdoor equipment, still stressing the use of incandescent and how to bring out and highlight hard goods merchandise.

Fluorescent and mercury teams both stressed the higher efficiency and higher outputs of their lamp sources and the building up of general lighting for used car lots beyond today's I.E.S. recommended practices.

Special Products names Wood as sales manager

SPECIAL PRODUCTS Company of Tennessee, Inc., has announced the appointment of George T. Wood as general sales manager of the company.

Before joining Special Products, Mr. Wood was marketing vice-president for Smithcraft Corp. He has also served with Lewyt Corp., and with Graybar Electric Co.

He is a graduate of Washington and Lee University.

George T. Wood

Iona awards doctorate to honor lighting pioneer

HENRY L. LOGAN, Fellow IES., and vice-president in charge of research for the Holophane Co., Inc., was recently awarded the honorary degree of Doctor of Laws, by Iona College, New Rochelle, N. Y., in recognition of his pioneering contributions as inventor, author, and lecturer, to the science of illumination and its applications.

Henry L. Logan

Delaware Valley show to be held in October

A NEWLY ANNOUNCED electrical show, the Delaware Valley Electrical Progress Show, has been slated for October 3-5, 1961.

Featuring exhibits of industrial-commercial applications showing power, heating, lighting, and air conditioning equipment, the show will include some 204 booths.

It will be held in Convention Hall, Philadelphia, Pa., Louis C. Donaghue, show manager, has announced.

Swivelier names two new representatives

SWIVELIER CO., INC., 30 Irving Pl., New York 3, N.Y., has announced the appointment of Finney-Irvin Associates as their representative in the Nashville, Tenn., area.

Thomas A. Marshall & Associates has been appointed as representative in southern Florida.

'Electrical Estimating' can help contractors

"ELECTRICAL ESTIMATING," Third Edition, by Ray Ashley, electrical engineer and engineering consultant, and published by McGraw-Hill, is designed for the electrical contractor and estimator who wants to increase his business by more efficient management and understanding of his field.

Containing 225 pages, and illustrated, this third edition of "Electrical Estimating" costs $12.50.

Reflecting more than 25 years of practical experience in all branches of the electrical contracting indus-

COMING EVENTS

National Association of Lighting Maintenance Contractors, National Convention, Flamingo Hotel, Las Vegas, Nev., Aug. 21-23, 1961.

IES National Technical Conference, Chase Park Plaza Hotel, St. Louis, Mo., Sept. 24-29, 1961.

Old Dominion Industrial Exposition, Inc., Statewide Industrial Exposition, "Index," Roanoke, Va., Sept. 27-30, 1961.

Lighting Progress Exposition, Electrical League of Southern Calif., Hollywood Palladium, Hollywood, Calif., Oct. 3-5, 1961.

Delaware Valley Electrical Progress Show, Convention Hall, Philadelphia, Conn., Oct. 3-5, 1961.

Western Building Industries Exposition, Great Western Exhibit Center, Los Angeles, Calif., Oct. 7-10, 1961.

National Electrical Contractors Assn., Annual Convention and Exposition, Sheraton Park Hotel, Washington, D. C., Oct. 9-12, 1961.

AIEE Fall General Meeting, Statler-Hilton Hotel, Detroit, Mich., Oct. 15-20, 1961.

Eighth Industrial Electric Exposition, Penn - Sheraton Hotel, Pittsburgh, Pa., Nov. 7-9, 1961.

AIEE Winter General Meeting and Electrical Engineering Exposition, New York Coliseum, Jan. 29-Feb. 2, 1962.

Sixth National Electrical Industries Show, New York Coliseum, March 11-14, 1962.

try, "Electrical Estimating"—widely accepted as a standard in the field—ranges in its coverage from selection and training of electrical estimators and proper use of estimating tools, to the cost of preliminary estimates and preparation of final bid sheets.

Included are sample estimates, methods of checking estimates, and the preparation of labor-cost units. The book also illustrates how to figure markups and gives many pointers useful in solving problems of estimating, appraisal, cost accounting, and job scheduling.

The third edition contains 25 tables of labor-cost units, embracing over 1,800 individual items.

Special sections deal with many pertinent areas, including lighting.

Opal glass production announced by Angelo

THE WIDE RANGE of blown opal glass commercial units manufactured by Angelo Brothers Company are now carried in stock for immediate delivery, according to an announcement by Rocky Angelo, sales manager.

The company's plant and warehouse is located at 2333 North Mascher St., Philadelphia 33, Penn.

Nell Collins rejoins Atlanta lighting firm

NELL COLLINS, well known lighting consultant, has rejoined Atlanta Lighting Fixture Co., 340 West Peachtree St., N.W., Atlanta, Ga., as sales representative and lighting consultant, reports Dave Franco. Mrs. Collins came to Atlanta with this company six years ago from Mayer Electric Supply in Birmingham, Ala., and has been in the light-fixture business for the past ten years.

Wide-Lite shows floods by use of truck booms

WIDE-LITE CORPORATION of Houston has devised an unusual way to demonstrate its floodlights.

Mobile demonstrations are made possible by using three custom-built, specially-equipped Dodge D-200 trucks with special generators.

Each truck is equipped with a 40-foot telescoping boom which can be rotated as well as elevated and lowered. At the end of the boom is an arm holding three 1,000-watt Wide-Lites.

This truck, with its 40-foot boom, demonstrates Wide-Lite floodlights.

Wide-Lite is offering the use of the three Dodge demonstration units to manufacturers' representatives throughout the nation.

Westinghouse to light capital sports stadium

WESTINGHOUSE ELECTRIC Corporation is manufacturing the lighting system that will make the new Washington, D.C., football-baseball stadium one of the best lighted outdoor sports facilities in the country, it was announced recently.

Edward C. Huerkamp, manager of the company's Lighting Div., said the contract calls for delivery of over 2,100 floodlights, each rated at 1,740 watts.

The new stadium, located about 15 minutes from downtown Washington, will be ready for use this fall by the Washington Redskins and for the Washington Senators at the opening of baseball season next year.

"In addition to providing more light than has ever been put in such a stadium, this system will meet the different requirements of the two sports," Mr. Huerkamp explained. For night baseball games, the lighting will follow the traditional pattern of being brighter in the infield—200 footcandles there and 150 footcandles in the outfield. This is about ten times brighter than the best lighted room of an average home, Mr. Huerkamp said.

For football games, the lighting pattern will be changed to give a uniform brightness throughout the field.

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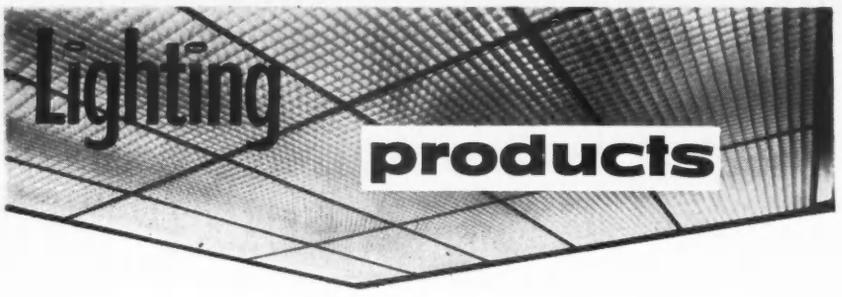


Incandescent light dimmer

A full-range electronic incandescent light dimmer that fits into a standard single wallbox is now available for homes and commercial buildings from Electro-Solid Controls, Inc., 8001 Bloomington Freeway, Minneapolis 20, Minn. The Dreamliter 600 provides smooth, gradual control of lighting intensity all the way from full dark to full bright on incandescent circuits up to 600 watts.

The Dreamliter is the size of an ordinary switch. It installs like a

standard two-way switch and uses the same two wires, the same single wallbox and the same standard switch plate.

Dreamliter is a completely new solid-state, semi-conductor device, using components developed specially for this application by Texas Instruments, Inc., of Dallas. It is not a rheostat or a variable transformer. It electronically reduces the flow of electricity as it dims the lights. Therefore it saves electricity and makes light bulbs last longer.

Write P-801 on reply card, p. 17

Infropake fluorescent filter

Infropake Corporation of America, 1015 Warehouse St., Greensboro, N.C., announces an entirely new lighting product, the "Infropake Filtersleeve."

Filtersleeves are intended for any high intensity fluorescent lighting installation where eye strain, color discrimination, fabric or paint fading, or synthetic fiber degradation are unsolved problems. Alleviation of these difficulties is achieved by a specially impregnated plastic film, which filters the ultraviolet energy transmission.

Filtersleeves are available in all sizes and are reusable. The clear plastic film passes 90 per cent of the visible light, but filters out the ultraviolet emissions, and thereby eliminates the fading, degradation, and deterioration of fabrics, plastics and metal paint finishes, which are caused by ultraviolet light. This results in better color discrimination, a marked reduction in glare specular reflections, and a more comfortable diffused light, the manufacturer claims.

Write P-802 on reply card, p. 17

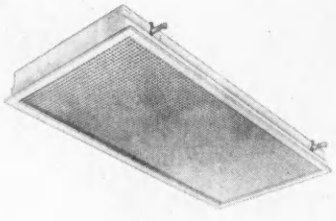
Guth swing bracket troffers

New troffers from Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo., feature swing mounting brackets to simplify installation and save on troffer installation costs.

A complete variety of troffers that will fit almost every specification requirement is now available. New 4-¾-inch shallow models come in 2- and 4-foot widths, while other units in ½- and 1-foot widths are available. All troffers come in 2-, 4-, and 8-foot lengths, are seperately fused, and include CBM/ETL ballasts.

All the units have a tough, durable finish of 300-degree baked-on acrylic paint, and are U.L. listed.

A wide variety of bottoms includes Gratelite louver diffuser and

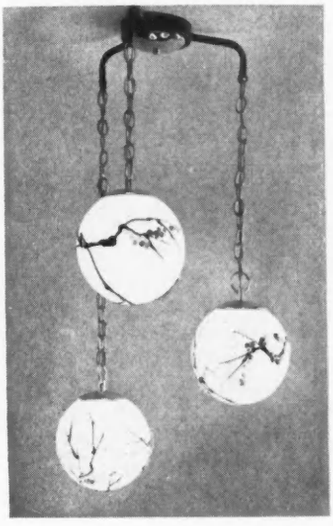


Prismoid Gratelite. Swing mounting brackets are present for height of ceiling support members, are released by tripping clip from inside the troffer, then hooked over the support. Final adjustment to the troffer is made by turning adjustment screws to draw up troffer trim flush with ceiling.

Write P-803 on reply card, p. 17

Lightcraft white opal fixtures

"Driftwood," a new lighting design by Lightcraft of California, 1600 West Slauson Ave., Los Angeles,



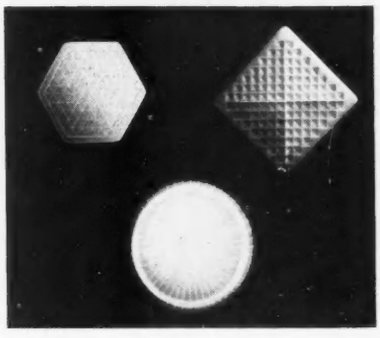
Calif., has been recently introduced to the market.

Fixture groupings in this line feature white opal glass with a hand sculpted motif in amber toned gems.

Write P-804 on reply card, p. 17

Prescolite glowing fixtures

A new approach to incandescent lighting—glowing geometric shapes which combine a light source and surface decoration into one architec-



tural unit—has been introduced by the Prescolite Manufacturing Corp., 2229 Fourth St., Berkeley 10, Calif.

The new series of geometric shapes are called Light-Forms. They

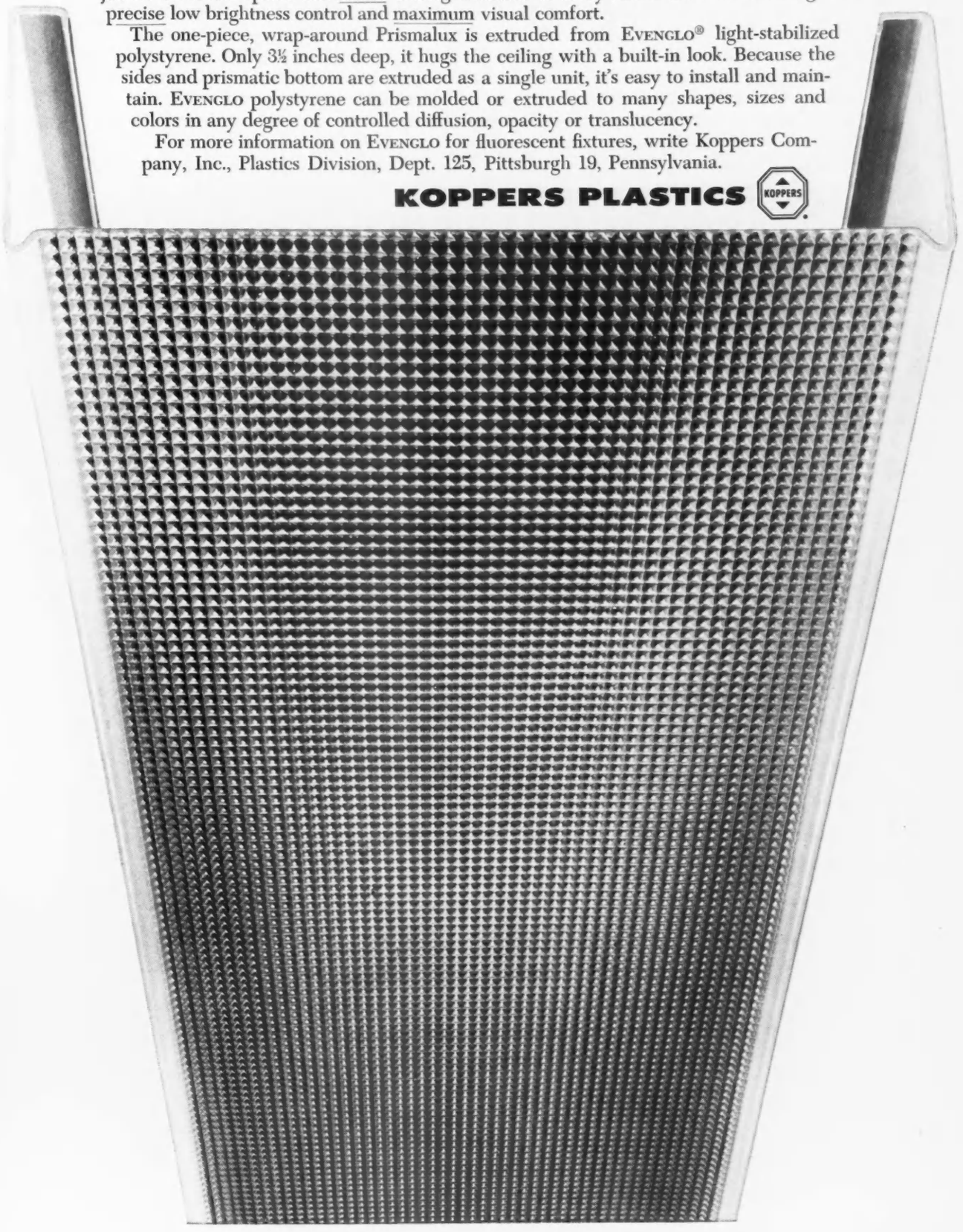
THIS PLASTIC COMPONENT MAKES CEILINGS WORK LIKE SKYLIGHTS

The new Prismalux fixture by Lightolier has a unique one-piece plastic diffuser with crystal prismatic bottom and white translucent sides. The prismatic bottom directs even, glareless light down to the work area. The translucent sides spread soft, shadowless light to the adjacent overhead space—the entire ceiling becomes a softly illuminated area that gives precise low brightness control and maximum visual comfort.

The one-piece, wrap-around Prismalux is extruded from EVENGLO® light-stabilized polystyrene. Only 3½ inches deep, it hugs the ceiling with a built-in look. Because the sides and prismatic bottom are extruded as a single unit, it's easy to install and maintain. EVENGLO polystyrene can be molded or extruded to many shapes, sizes and colors in any degree of controlled diffusion, opacity or translucency.

For more information on EVENGLO for fluorescent fixtures, write Koppers Company, Inc., Plastics Division, Dept. 125, Pittsburgh 19, Pennsylvania.

KOPPERS PLASTICS



Diffuser lens extruded by: Plaskolite, Columbus, Ohio.

are made from hand-blown, satin etched thermopal glass, and provide architects, builders, and lighting specialists with a latitude, depth, and flexibility usually unavailable in conventional lighting fixtures.

The forms, hexagonal, round, square, and rectangular, can be used individually or in combinations to create patterns of light by varying the number and arrangements of the shapes. They can be integrated into interior or exterior wall surfaces of homes, motels, offices, banks, and stores.

Ranging from seven to 12 inches across, the units are 3½ inches deep and can be used in 28 pattern combinations. U.L. listed, Light-Forms can be mounted to any standard electrical outlet box. They have a wattage range from 40 to 150 watts.

Write P-805 on reply card, p. 17

Globe color filter fixture

A new type lighting fixture, employing the techniques of stage lighting for residential illumination, is now offered by Globe Lighting Products, Inc., 1710 Flushing Ave., Brooklyn 37, N. Y.

The new fixture, Residrama, features a color filter concealed in ran-

dom perforated cylinder which glows with candlelike beams of orange and yellow. This cylinder is encased in an elliptical cage and finished in matte white with polished brass trim.

Available with or without the color filter, the fixture comes in 26, 18, and 11-inch diameters. The 18-inch size is also made with a pulley.

Write P-806 on reply card, p. 17

G-E smaller 200-watt bulbs

Higher light output and smaller size for 200-watt light bulbs used in commercial, industrial, and institutional applications are now of-

fered by general Electric Co., 1 River Rd., Schenectady 5, N. Y.

The brighter, more compact bulbs deliver five per cent more light than their predecessors of the same wattage. In size, the bulbs are reduced three-quarters of an inch in length and a quarter-inch in diameter to the more convenient dimensions of 150-watt lamps. The bulbs are provided at no increase in either bulb cost or power cost.

In the bulbs, the tungsten filament position is changed from crosswise to lengthwise along the bulb axis. The construction change permits the filament to operate more efficently, thus increasing the light output per watt of electricity consumed. It also reduces the amount of light-absorbing bulb blackening which occurs as an incandescent lamp nears the end of its life.

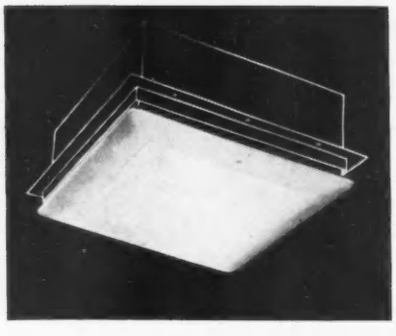
The reduction in bulb size becomes practical because the new filament construction reduces the temperature of the bulb's base.

Write P-807 on reply card, p. 17

Litecraft Endura fixtures

A new series of finely engineered incandescent lighting fixtures, designed along classically simple lines, is available from Litecraft Manufacturing Co., 100 Dayton Ave., Passaic, N.J.

Called the Endura series, fixtures in this new line include incandescent recessed squares, darklights baffled downlights, Alzak down-



lights, adjustable accent lights, and recessed round regressed lens lights.

The Endura series is designed to add an important finished appearance to commercial, institutional, and residential interiors. Careful attention has been given to engineering and design details of these fixtures.

For example, Endura recessed units are built to fit precisely into the ceiling and become an integral part of it. Joint detail where ceiling and fixture meet is clean and neat—an ideal flush treatment with no exposed screws or hardware.

Other important features are efficient Alzak reflectors; steel parts Bonderized after fabrication; 18-gauge cold rolled steel housings; double gasketing for a positive seal against light leakage, dust, and moisture; top relamping; anodized face frames for permanence indoors and out; and hinged face frames with positioning springs for relamping safely from below.

Write P-808 on reply card, p. 17

Ward self-standing Polite

Extra light that often is needed while camping or having a nighttime backyard party can be supplied with a new self-standing Polite, available from Ward Manufacturing, Inc., 2530 Spring Grove Ave., Cincinnati 14, Ohio.

Mounted on a five-foot sectional steel pole with 20 feet of electric cord, the new light may be operated from any automobile cigarette lighter (12 volts) or, in another version, from regular 110-volt a-c house current.

With a foot assist near the spear-shaped bottom, the pole is plunged into the ground and becomes free standing.

Besides the 12- and 110-volt styles, a six-volt model is available on special order.

Write P-809 on reply card, p. 17

Emerson residential lighting

"Trendlighting," a new line of highly-styled lighting fixtures from the Emerson-Imperial Div., Emerson Electric Co., 8100 Florissant, St. Louis 36, Mo., is now on the market.

Encompassing some 246 fixtures, the line includes model No. 1031, composed of textured colorful ceramic pendants available as single units or in cluster form. The pendants are made in turquoise, and in orange-on-black or white.

Spreader kits are available for use with these and other pendant fixtures in the new line. These kits permit clusters of from two to five lights and are adjustable in diameter sizes ranging from 18 to 24 inches.

Write P-810 on reply card, p. 17

Swivelier high bay fixtures

A completely redesigned and augmented line of adjustable fixtures for high bay lighting in auditoriums, convention halls, public buildings, athletic arenas, museums, churches, stores, and all other high ceiling lighting applications is now available from Swivelier Co., Inc., 30 Irving Pl., New York 3, N.Y.

For the Par 56 and Par 64 lamps, the "Tripoli" shade is being introduced. There is an outlet box unit and a clamp unit, with a two-conductor cord, for each lamp—plus a special clamp model with a grounded three-conductor cord for the Par 56 lamp only. All units are finished in kiln-baked aluminum enamel.

Outlet box units are furnished with the "Shur-Mount" plate which provides easier, more secure mounting. Clamp models attach to flat or cylindrical surfaces up to two inches thick, and are protected to prevent scratching of surfaces.

For the 200-watt Par 46 lamp, five different versions are available, all with the new brushed satin aluminum "Bermuda 46" shade: two outlet box units (one for emergency low voltage lighting), two clamp units, and one Trol-E-Duct model.

All are made with the spring-tension socket, which adjusts to any position, without wing nuts or set screws.

Write P-811 on reply card, p. 17

Universal quiet ballasts

All service-guaranteed ballasts from Universal Manufacturing Corp., Dept. A, 29-51 E. 6th St., Paterson 4, N.J., CBM certified by ETL for use with 40-watt rapid-start lamps, are now "A" sound rated.

Operation of the ballasts at this extremely low sound level has been achieved by new design changes and the utilization of an improved impregnation material.

The new "A" sound rated ballasts

DECORATIVE TRANSLUCENT BAFFLE

for Fluorescent Lighting

UPLIGHT

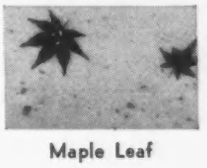
NEUTRAL

DOWNLIGHT

Rattan

Walnut (translucent)

Grass Cloth



Maple Leaf

These baffles are available in a wide variety of standard or special decorative effects. They enable the manufacturer of lamps or lighting fixtures to coordinate decorative and functional fluorescent lighting with incandescent lamps and fixtures in contract installations, hotels, motels, apartments, as well as private residences. Maximum length 50". End pieces available from Marplex necessitating only 2 holes in each end of any standard fluorescent strip for installation of the Marplex baffle. Shown are a few of Marplex patterns. Other effects available are White Linen, Swirl, Provincial, Mosaic, and others.

For literature, prices, and color samples, write to:

MARPLEX CO.

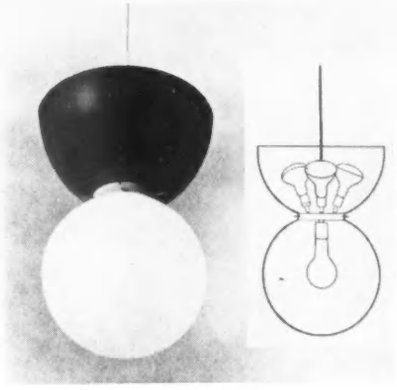
348 Washington St., El Segundo, Calif.

Represented by: Weingart & Lustig, Los Angeles 11, California • William A. Hawkins, Cleveland 30, Ohio • Kirshenbaum & Sherman, Brooklyn 22, New York • Richard J. Sanders, Chicago 10, Illinois.

are particularly suitable for use in areas of low ambient sound level where quiet is essential, including hospitals.

Ballasts with "A" ratings are available in standard designs as well as low heat rise and thermal cutout designs. The "A" sound rating also applies to 30-watt lamp operation where the ballast can be used for both 30- and 40-watt rapid-start lamps.

Write P-812 on reply card, p. 17



Habitat commercial fixture

The Duo-Form, a functional fixture designed for commercial and contract use, is now being offered by Habitat, Inc., 336 Third Ave., New York 10, N.Y.

The form, designed for grace and efficiency, is a simple combination of two geometric shapes, a metal hemisphere above a sphere of hand-blown white opal glass.

The hemisphere conceals three reflector bulbs mounted on swivel bases, which can be directed for concentrated ceiling illumination in any direction desired, washing the ceiling for a soft reflected glow of light.

The glass sphere alone casts a diffused but direct downlight, illuminating down and to all sides, when such illumination is required.

Wired with one, two, and three circuits, Duo-Form may be used as follows: (1) both the white glass sphere and the hemisphere on simultaneously; (2) just the white sphere illuminated; and (3) just the metal hemisphere illuminated.

The fixture's metal hemisphere is available in six colors: chalk white, barbizon red, cloudburst blue, sandstone yellow, sprayed brass, or polished aluminum. The stem is available in white, brass, or chrome.

Write P-813 on reply card, p. 17

Legion outdoor fluorescent

A new fluorescent floodlight designed for outside all-weather lighting has been introduced by the Legion Lighting Co., 221 Glenmore Ave., Brooklyn 7, N.Y.

Useful for installations ranging from billboards and store windows to island plazas and service stations, the fixture features simple installation. The fixture is prewired at the factory, so remote wiring is eliminated. There is no need to pull wire through each conduit.

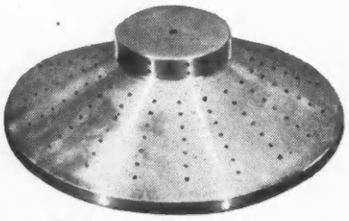
When the new fixture is slipped into position and locked from the outside, two set screws and a neoprene gasket permit 360-degree rotation.

Extra large splice boxes are also provided, as well as plastic shields which are pliable and can be quickly inserted or removed without disturbing the reflector mounting.

Write P-814 on reply card, p. 17

HOWARD

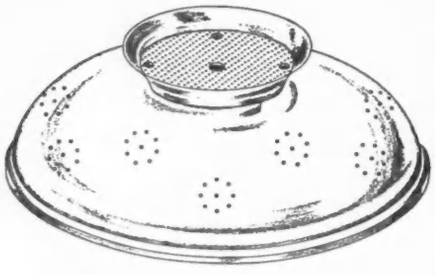
is busting out all over with designs to increase your business



D 414 P—Top 4½". Bottom—14". Height—3½".

EB 1225—Semi-Recessed Adjustable. Eye Ball Unit. Horizontal Rotation: 360°. Vertically—45°. Can height—6". Face plate width—10½". Eyeball opening—5¼". Takes clip louver.

PD—1085
3 Piece Shade. Collar Diameter 7⅝". Collar Depth — 1½". Perforated Steel Insert. Depth — 3½". Opening—17½".



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Tradition... richly illuminated

Fixtures... radiantly beautiful

Flickering candle flame . . . or so it seems! But in reality, it is the soft clear illumination offered by Nalco's Candylbeme Lamps, the truly distinctive way to grace your fixtures.

Delicately-shaped, in candelabra, intermediate, or standard base. Special carbon filaments give longer life. Clear or frosted, for modern or period settings.

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NORTH AMERICAN *Electric Lamp Co.*

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FLEXIBLE ARMS

AMERICAN MADE

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LONG LENGTHS OR CUT TO SIZE WITH OR WITHOUT FITTINGS
ALSO HEAVY DUTY MADE TO YOUR SPECIFICATIONS

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SINGLE OR DOUBLE BALL

BRASS • NICKLE • CADMIUM

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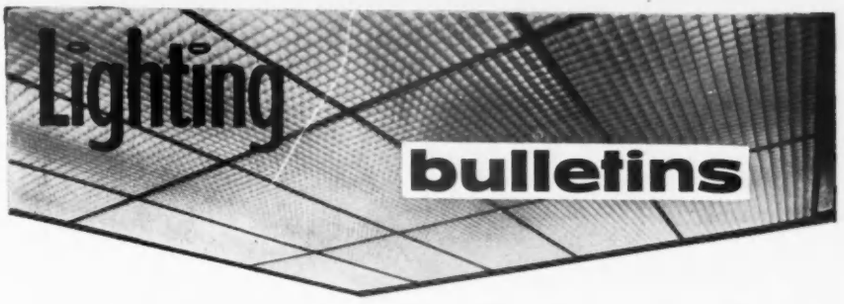
REXGLO PRODUCTS CORP.

60 LAWRENCE AVENUE, LAWRENCE, NEW YORK



Holophane Company, Inc., 342 Madison Ave., New York 17, N.Y., offers a new six-page brochure covering three 13-inch-square ceiling-recessed **incandescent commercial luminaires** having prismatic glass reflectors and lenses. A flat, ceiling-level lens, a concave lens, and a dropped-lens luminaire with prismatic side panels are illustrated and described. Light distribution curves and brightness coefficient tables provide engineering data.

Write B-815 on reply card, p. 17

A new color brochure, No. 230, on colonial and custom design **chandeliers** is now available from the **NL Corp.**, 2480 E. 22nd St., Cleveland 15, Ohio. Installation photographs illustrate many different styles of decorative and functional special design, chandeliers for commercial or ecclesiastical application.

Write B-816 on reply card, p. 17

Lighting for gardens, patios, pools, shrubs, sidewalks and driveways is illustrated in a free brochure from the **Steber Div.**, of **Pyle-National Co.**, 2700 Roosevelt Rd., Broadview, Ill. The literature includes complete description and prices for a wide choice of portable types. Outdoor convenience receptacles are also included along with complete instruction for underground wiring when permanent installations are desired.

Write B-817 on reply card, p. 17

"Design and Application of Holophane **Prismatic Street Lighting Refractors,"** from **Holophane Co., Inc.**, 342 Madison Ave., New York 17, N.Y., is a 24-page booklet now available to city engineers, superintendents and public works departments, utilities, and consulting engineers. The illustrated book presents design illustrated considerations and application information based on years of field experience.

Write B-818 on reply card, p. 17

A new 12-page Fluorescent Lighting Ballasts Buyer's Guide, #FL-370A, is now available from **Sola Electric Co.**, 1717 Busse Rd., Elk Grove Village, Ill., a division of Basic Products Corp. This bulletin lists Sola **fluorescent lighting ballasts** for indoor and outdoor applications. Electrical and mechanical specifications are listed for each ballast. Also highlighted are warranty, certifications and listings, operating voltage and frequency, and temperature specifications.

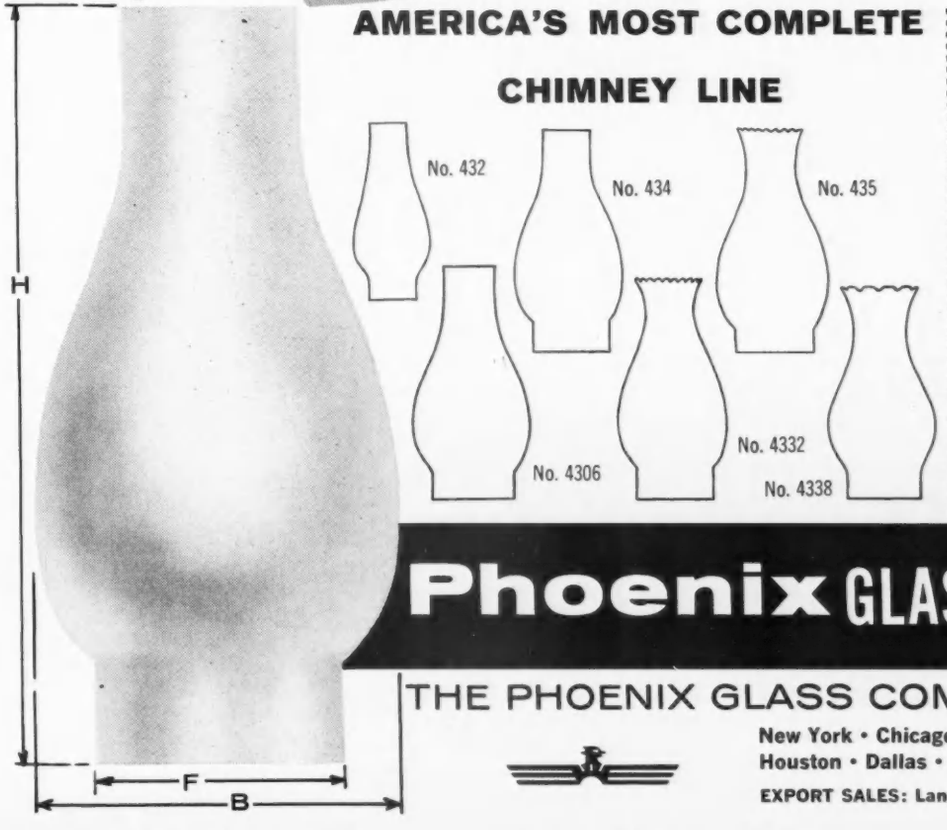
Write B-819 on reply card, p. 17

Stainless steel units are among the new concepts in **showcase lighting fixtures**, rail reflectors, mounting brackets and other fittings recently published in a catalog by **Morris Kurtzon, Inc.**, 1420-30 South Talman Ave., Chicago 8, Ill. "Showcase Catalog No. 96," also shows reflectors in anodized aluminum with satin brass, bronze, copper, or natural finishes; as well as self contained wiring assemblies with remote ballot boxes.

Write B-820 on reply card, p. 17

A four-page folder now available from **Advance Transformer Co.**, 2950 North Western Ave., Chicago 18, Ill.,

NOW OPAL GLASS ADDED TO
AMERICA'S MOST COMPLETE
CHIMNEY LINE



Phoenix also makes a Broad Line of Crystal Glass Chimneys.
Write for Sizes.

ITEM	B	H	F
432	3"	6½"	2⅛"
434	4"	8½"	3"
435	4⅝"	9½"	3½"
4306	4¾"	9¾"	3½"
4332	4"	8½"	3"
4338	4 7/16"	8⅝"	3"

Phoenix GLASS CHIMNEYS
THE PHOENIX GLASS COMPANY • Monaca, Pa.
New York • Chicago • Los Angeles • Cleveland
Houston • Dallas • Miami • Winnipeg
EXPORT SALES: Langguth-Olson Company, New York

describes the company's improved Solid-fil development in **fluorescent lamp ballasts.** Conventional fill ballasts are also included in the brochure.

Write B-821 on reply card, p. 17

An all new color catalog featuring a comprehensive collection of **lanterns** is now available from **Artolier Corp.,** 141 Lanza Ave., Garfield, N. J. Included are scroll, post, carriage, wall, and other types of lanterns.

Write B-822 on reply card, p. 17

A complete 20-page brochure on the subject of **combination air-handling troffers** is now available from **Sylvania Electric Products, Inc.,** One 48th St., Wheeling, W. Va. Sylva-Flo troffers are featured in the brochure, which also contains many illustrations and technical information in the form of tables and charts covering photometric and air distribution data. Specification details are also included.

Write B-823 on reply card, p. 17

A 12-page illustrated brochure from **Gotham Lighting Corp.,** 37-01 31st St., Long Island City 1, N. Y., covers some of the fluorescent and incandescent **luminaires for architectural application** from that company. Complete specifications and ordering details are included.

Write B-824 on reply card, p. 17

Increased emphasis on traditional items, new designs making use of materials such as ceramics, cased-opal glass and plastics, and new collections of chandeliers and accent lights are features of the new 68-page, full-color **lighting** catalog from the **Emerson- Imperial Div., Emerson Electric Co.,** 8100 Florissant, St. Louis 36, Mo. Ordering specifications are included.

Write B-825 on reply card, p. 17

A new collection of **fluorescent fixtures** is featured in a catalog from **Metallic Arts of Northeast, Inc.,** 150 Broadway, Cambridge 42, Mass. The illustrated, 24-page catalog covers a line in which opalescent acrylic diffusers blend with structural surfaces for both variety and harmony.

Write B-826 on reply card, p. 17

A new brochure on **ballasts** is now available from the **Dafforn Transformer Co.,** 1901 North Clybourn Ave., Chicago 14, Ill. Covered are single lamp, finger type, germicidal lamp, and plug in type ballasts, with illustrations and complete specifications included.

Write B-827 on reply card, p. 17

Code article

(Continued from page 48)

well-ventilated metal cases with not less than one inch clearance between the case and the resistance elements. A clearance of three inches from the floor is required where rheostats are mounted on standards. Type AA asbestos-covered conductors are required between the rheostats and the lamps.

(5) Switches on standards are required to be so designed that no live parts are exposed to contact.

(6) Stranded conductors are required for connections to lamps, rheostats, and switches. Any type of approved standard terminal connections are permitted for rheostats or switch terminals. But the conductor terminals which are to be used at arc lamps are required to be of the pressure type only.

Portable plugging boxes must conform to the following requirements:

(1) Enclosures are required to be so designed that no live parts will be exposed to contact.

(2) Receptacles are required to have a minimum rating of 30 amperes and to be provided with overcurrent protection. The overcurrent protective device is required to be installed in an enclosure which is provided with self-closing doors.

(3) Busbars supplying plugging devices are required to have a current-carrying capacity equal to the sum of the ampere rating of all of the receptacles supplied. Lugs must be provided for the connection of the master cable.

Lighting installation

(Continued from page 46)

temporary roof prior to the completion of the ceiling. By hooking up fixtures to the junction boxes, checking out all circuits for operation before the ceiling was put up, we saved considerable time as against having to do this at a later date when the ceiling was completed. Moreover, it precluded damage to a finished ceiling if handled at a later date.

Another proved time-saver of about 50 per cent was the use of a power winch to pull feeders and service. Time was further cut in the installation of outlet boxes on concrete walls through use of a power stud driver.

In this wood frame and sloping steel roof of octagonal shape, we used greenfield instead of conduit.

Industrial lighting

(Continued from page 40)

is easier. The use of luminaires with strong upward light components, fluorescent 20-30 per cent, mercury ten-15 per cent, has

The OLD Way — **The NEW Way**

USE ROYAL FLUORESCENT "INSTANT" LAMP STARTERS

Manufacturing and Serving the Electrical trade in all parts of the world. Certified & Approved by U. L. Laboratories.
Guaranteed for Service, Quality and Durability. Packed in attractive color cartons—100% American made. Prices are reasonable. Mail your orders now!

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Fixtures with starters last longer, stay brighter, use Royal Instant Lamp Liters

WATCH FOR WARD'S AD IN THE NEXT ISSUE

announcing

A REVOLUTIONARY IDEA IN THE SWIVEL INDUSTRY

Ward ENGINEERING INC

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met with great success.

Not only does the lighted ceiling reduce contrast between itself and the luminaire, but also relatively clean reflectors are provided through this inherent ventilating feature. And ventilation is the key to self maintenance in luminaires.

Where practical, ceilings should be 70-80 per cent in reflectance, walls 50-60 per cent, and floors 15-20 per cent. Highly reflective surfaces not only improve the economy of lighting installations, but also thoroughly diffuse the light, thereby minimizing shadows on the work task and minimizing the brightness ratio between the task and the surrounds.

The cost of every device employed to make seeing easier and more efficient is returned many times in the production line profits.

The lighting of low and high bay areas is much more than quantity of illumination. To realize the many benefits of higher footcandles, lighting installations must provide maximum visual comfort. At the same time engineering application must yield practical and economically sound lighting installations. It is to these ends that we all constantly strive.

Trend surveys

(Continued from page 36)

architectural styles are affecting your thinking for a new line of homes"? In addition to specific interviews, Obata also made an extensive review of the latest work of well known architects, decorators, and interior designers.

Obata's entire report was compared with the main points revealed from our depth interviews, and in the quarterly engineering reports, and some of the comments showed up again and again in all three reports. And this is what we were after. We felt that these represented an indication of a definite trend. And for the most part, the new fixtures and design innovations in our new catalog can be found in all three of our surveys. The accompanying table summarizes all these surveys and indicates how we have added or subtracted to the Imperial line in accordance with these results. How accurate is this survey method in anticipating major trends in the fixture business? Our new Imperial catalog is just being introduced this month, (August) and we probably won't be absolutely sure until at least a year from now.

However, from the initial reaction, we are already convinced that this catalog will do a better job of giving our distributors the fixtures they feel they need. Our own confidence in our approach is indicated by the theme of our catalog. It's called "Trendlighting."

Office lighting

(Continued from page 41)

ther complicated by air vents spaced almost at random throughout the area.

Considering maintenance and

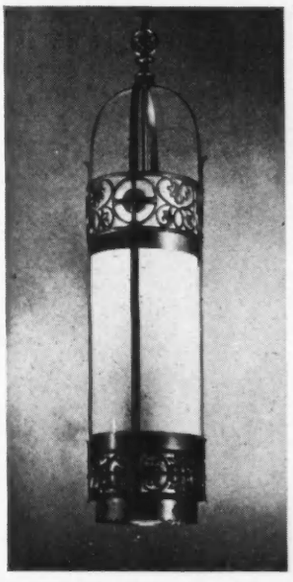
HAVE YOU MOVED RECENTLY?

Please help to keep mail moving freely.

If you have changed your address or your title, please let us know so that we can up date our mailing lists.

Thank you!

LIGHTING
1760 Peachtree Road, N. W.
Atlanta 9, Georgia



First in Value for church lighting

Eye-Easy lighting incorporates creative design, careful engineering, finest materials and superb finishing for lifetime quality. Glareless light control gives maximum output with minimum maintenance. Compare value when comparing price.

Request modern or traditional catalogs on your letterhead.

Eye-easy®
MANNING
CHURCH LIGHTING
SHEBOYGAN, WIS.

installation costs, we decided that a direct fixture with control lens would provide the most desirable characteristics at lowest cost.

The final solution to the problem was a double "E" arrangement of four-lamp, rapid-start Daybrite fixtures with Cleartex control lenses. With CWX lamps, this arrangement provided 200 footcandles initially and between 130-140 footcandles maintained.

Fixture sales

(Continued from page 32)

tects and other electrical contractors, and sometimes she even tears pictures of fixtures out of catalogs and mails them to architects who are designing specific homes in which Mrs. Hinote feels these fixtures belong.

"Having handled fixtures for nearly 30 years," she points out, "we find that to sell fixtures properly and profitably, they must be shown. The amount to be spent on fixtures can be increased by working with the owners of a home being built and inducing the wife to visit our showrooms with the floor plans and allowing us to match the fixtures to the rooms.

"Seeing the fixtures actually in use in our showrooms, she becomes aware of the importance of fixtures and how they may be made to give her home a more distinctive and livable atmosphere and appearance. Women need to be sold on fixtures as a part of the furnishings of a home, not merely as a means of supplying illumination."

The Hinote organization has a branch in Port Arthur, which also shows an extensive selection of fixtures, second in the area to the main store in Beaumont. Carl T. Hinote is president of the company.

525-fc office

(Continued from page 31)

offering a choice of nine positions. Three additional positions control the incandescent downlights along the walls and drapery. The footcandle level at each position is as follows: (1) 155, (2) 203, (3) 252, (4) 275, (5) 330, (6) 390, (7) 425, (8) 475, and (9) 525.

To dissipate heat from the lamps, a two-speed fan was installed which is connected to a duct system with an outlet on the roof of the building. At levels up to 330 footcandles, the fan operates on low speed. When the switch is set for 390 to 525, the fan operates at high speed. This arrangement was necessary in order to insure the most efficient operation of the lamps.

Ordinarily, the heat from high-intensity lighting systems can be used in winter as a supplement to the regular heating system. However, in this case it was more economical to exhaust all of the heat instead of modifying the existing heating and air conditioning system.

The installation has served its purpose well. Dr. Drumm reports no unsatisfactory comfort conditions from heat or glare. And the room has served as a living demonstration to company lighting prospects that high level lighting is possible and practical.

Supermarket light

(Continued from page 26)

thing to me personally, because my headaches have completely disappeared since moving into the new store building."

Lamps used are cold fluorescent. The lightly toned ceiling warms the light rays as they pass through, adding life and sparkle to the merchandise.

It is expected that relamping will have to be done every 18 months.

Complete Line of
RESIDENTIAL LIGHTING FIXTURES—
TRADITIONAL AND CONTEMPORARY

Write For
Our New Catalog

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9065 W. Washington Blvd. • Culver City, California

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Quality Lamp & Shade
Parts for the
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DECORATIVE LAMPS
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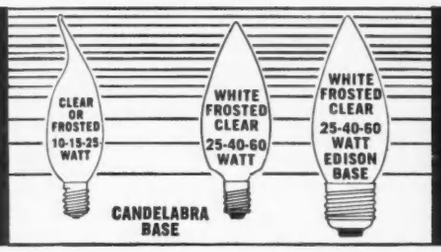
CLEAR OR FROSTED 10-15-25 WATT
WHITE FROSTED CLEAR 25-40-60 WATT
WHITE FROSTED CLEAR 25-40-60 WATT EDISON BASE
CANDELABRA BASE

Elite CO., INC.
"long a leader in the field of lighting"
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WAtkins 4-3220

CLASSIFIED

RATE: $15.00 per column inch.
Minimum charge: one column inch.

Publicly owned American manufacturer of Incandescent and Fluorescent lighting equipment for commercial and residential application seeks to establish working agreement with Canadian manufacturer or distributor to promote sales throughout Canada. Please write full details in strict confidence to Box 159, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Georgia.

MANUFACTURERS REPRESENTATIVES WANTED

We manufacture the finest in design and largest selection of recessed clocks in all sizes and finishes. Also highly-decorative executive styled wall clocks. Write Box No. 161, LIGHTING, 1760 Peachtree Road, N.W., Atlanta 9, Ga.

REPRESENTATIVES WANTED — Established, ambitious, fast-growing residential fixture line. Territories open—upper New York State, New England, Washington—Virginia—Maryland, Illinois-Missouri, and West Coast. Reply Box 174, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Ga.

SAMPLE MAKER

Excellent opportunity to run small but expanding custom dept. of large manufacturer of lanterns and fixtures. Write Box No. 180, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Ga.

WANTED, BY SALES REPRESENTATIVE

Plastic Mfgr. of styrene bullet diffusers, or any other type of plastic bullet shades, for the Lamp and Lighting Fixture Trade. Have nice following, and over 10 years experience, in the field. Box 181, LIGHTING, 1760 Peachtreet Rd., N.W., Atlanta 9, Ga.

FLORIDA REPRESENTATION

Well known, young, aggressive and very eager to obtain reputable indoor and outdoor, colonial and modern lighting lines, can promise results in this territory as you have never had before. My record speaks for itself. What have you? Every reply strictly confidential. Box 182, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Georgia.

LIGHTING SALES ENGINEERS

Manufacturer since 1895 desires lighting sales engineers with following among Architects, Engineers, Distributors etc. Engineered line of Commercial Flourescent and Incandescent lighting fixtures. 78 page hard back catalog. Corning and Holophane diffusers. Many territories open. Forward complete resume. State lines carried. THE KAYLINE CO., 1241 E. 45th St. Cleveland 14, Ohio.

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Territories will be negotiated by our Representative who will be visiting the U.S.A. September. Reply Box No. 183, LIGHTING, 1760 Peachtree Road, N.W., Atlanta 9, Georgia.

Manufacturer of Competitive Luminous Ceilings

Desires representation in all areas. Advise lines carried and area covered, etc. Reply to Box 184, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Ga.

PRODUCTION MAN

Metal lamp manufacturer with plant in NE Pennsylvania needs production man with knowledge of design. Salary open, commensurate with experience. Excellent opportunity for right man. Send resume of background to Box 185, LIGHTING, 1760 Peachtree Rd., NW, Atlanta 9, Ga.

AGENTS WANTED

To represent Cylindricell luminous ceilings (sold also as Infinilite) with fixtures using new variable thickness diffusers. Needs no grid system. A fast-selling, highly profitable line for qualified agents . . . over 250,000 square feet already sold. Your sales efforts backed by comprehensive literature, sales aids, national advertising; tight specs. and direct factory assistance when needed to land the big jobs. Many territories still open, including Seattle, Michigan, and Ohio. Write United Lighting & Ceiling Company, 2828 Ford St., Oakland 1, Calif.

DESIGNER WANTED

For international lighting fixture firm building new plant in Florida. Must be thoroughly experienced in incandescent lighting for residential and institutional users. Fresh new ideas welcomed. All replies held in strict confidence. Please state in reply experience and salary wanted to: P.O. Box Q, Miami 57, Florida.

QUALIFIED REPRESENTATIVE

The Mitchell Lighting Division seeks qualified representation for its full line of commercial, industrial, institutional and outdoor fluorescent lighting equipment. Applicant should be conversant with and have entry into the offices of architects and engineers or have public utility, distributor or contractor experience. Many territories are currently available. Send full details to Mitchell Lighting Division, 1800 North Spaulding Avenue, Chicago 47, Illinois.

WANTED
MANUFACTURERS REPRESENTATIVES

Calling on Fluorescent Manufacturers to sell our line of Medco Turret Lampholders. MECHANICAL DEVICE COMPANY, 210 N. Ogden Ave., Chicago 7, Illinois.

LIGHTING SALES ENGINEERS

Manufacturer desires lighting sales engineers with following among Architects, Engineers, Distributors, etc. Engineered line of Commercial Fluorescent Lighting Fixtures. Many territories open. Forward complete resume. State lines carried. STA-BRITE FLUORESCENT MFG. CO., P. O. Box 35-291, Miami, Florida.

SALES AGENCY

I offer 15 years of selling lighting fixtures at the executive level to electrical wholesalers. Am opening own sales agency covering Northern Illinois, Wisconsin, Northern Indiana and Western Michigan by both car and personal airplane. Have 36,000 cu. ft. available for storage. Reply to Box 186, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Georgia.

PROFESSIONAL SALESMAN

Over 20 years in lighting field with top contacts in area. Have administrative experience in all phases of operations, sales management, advertising and manufacturing. Prefer full line representation on agency basis in Calif., Arizona and Nevada, or can organize complete manufacturing operation. Resume on request. Box 187, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Ga.

SALES ENGINEER

Lighting sales engineer wanted. Manufacturer of national advertised line of fluorescent lighting fixtures has Florida territory open. Experienced territory man preferred. Excellent opportunity, salary and commission plus fringe benefits, free insurance, savings and retirement plan, travel expenses and auto. Write Box 188, LIGHTING, 1760 Peachtree Road, N.W., Atlanta 9, Georgia.

DESIGNER

Lamps and lighting fixtures. West Coast's largest manufacturer has opening for full time staff designer. Please reply in detail stating qualifications. Box 189, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Ga.

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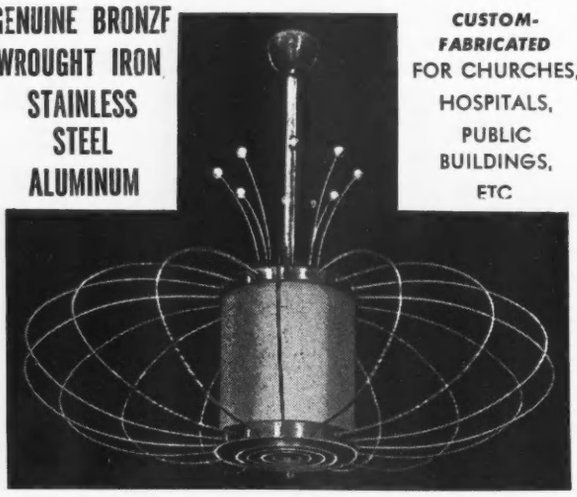

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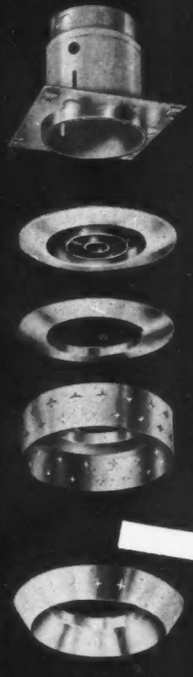

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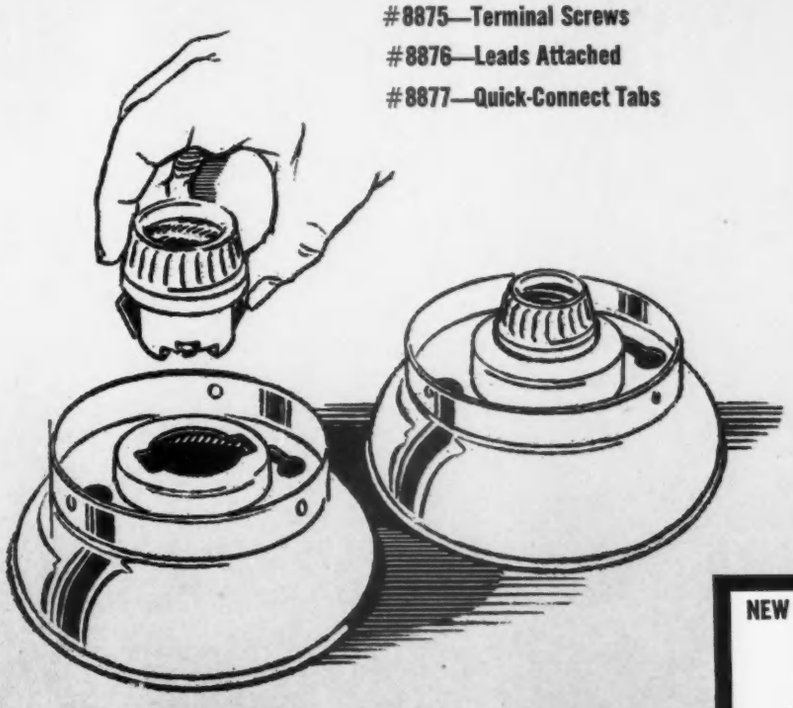

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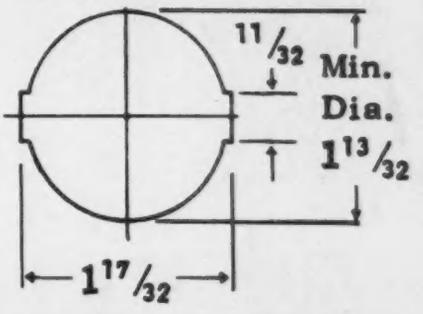

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